

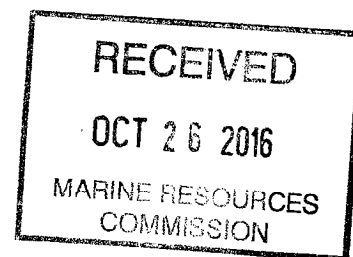
Howell, Beth (MRC)

From: Matthew Roth [rothenv@cox.net]
Sent: Wednesday, October 26, 2016 3:05 PM
To: Howell, Beth (MRC)
Cc: Mike Gelardi
Subject: Elbow Road Farm Field Development, Chesapeake - JPA - Part 1
Attachments: 2016.10.26.Elbow Road Farm Field Development.JPA.Part 1.pdf

Beth,
Hope all is going well. I just left you a message to let you know I could not get on to the VitaLink site so I am going to send these to you as several emails due to the file size.
Let me know if you have any questions.
Thanks,
Matt

Matthew Roth, P.W.S.
ROTH ENVIRONMENTAL, LLC
700 Prescott Circle
Newport News, VA 23602

Phone: (757) 814-1048
Fax: (757) 249-2257
Email: rothenv@cox.net



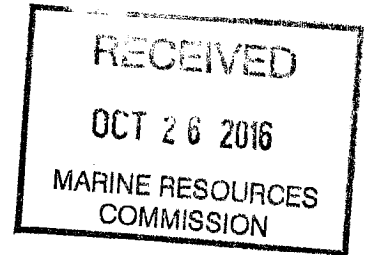


ROTH ENVIRONMENTAL, LLC

October 26, 2016

Rachael Maulorico
Virginia Marine Resources Commission
2600 Washington Avenue, 3rd Floor
Newport News, VA 23607

RE: Elbow Road Farm Field Development
Chesapeake, VA
Joint Permit Application
RE Project #06-006
USACE Project #NAO-2016-0712



Dear Ms. Maulorico:

Roth Environmental, LLC is providing you with this pdf copy of the Joint Permit Application for encroachments into farm ditches and stormwater ponds (waters of the U.S) on the subject site. The goal of the project is develop the site into a residential subdivision with associated roads, parks, and stormwater management ponds.

As a result of the proposed development, the following impacts will occur:

- 2,620 linear feet of unvegetated forested farm ditches through uplands
- 900 linear feet of sparsely vegetated farm ditches through uplands
- 3,155 linear feet of unvegetated farmed ditches through uplands
- 0.16-acres of stormwater management ponds that were excavated from uplands

None of the proposed work will affect tidal wetlands. Due to the condition of the ditches and their limited ability to perform ecological functions, the environmental benefits of taking the farmed fields out of production and installing stormwater management ponds offsets this impact.

Audrey Cotnoir is our project manager at the Corps of Engineers and Sheri Kattan is our project manager at DEQ.

Please contact me should you have any questions with the submitted information.

Sincerely,

ROTH ENVIRONMENTAL, LLC

Matthew Roth, P.W.S.
President

cc: Tri-Cities Properties, LLC

Macintosh HD:Users:Roth:Documents:Roth Environmental, LLC:Projects:2006:06-006.centerville:2016 Farm Field JPA:2016.10.26.Maulorico.Elbow Road Farm Field Development.cover letter.docx



ROTH ENVIRONMENTAL, LLC

ELBOW ROAD FARM FIELD PROJECT PROJECT DESCRIPTION AND DISCUSSION CHESAPEAKE, VIRGINIA RE PROJECT #06-006 OCTOBER 26, 2016

The Elbow Road Farm Field Project is located at 2014 Elbow Road in Chesapeake, Virginia. This is approximately one mile east of the intersection of Centerville Parkway and Elbow Road. The proposed project area is comprised predominantly of farmed fields with a few inclusions of forested areas.

The primary purpose of the proposed project is to construct a residential subdivision. The proposed plans for the subdivision depict 152 lots with associated roads, stormwater management features, and green space.

This project is being developed as a single and complete project as it is not dependent on other parts of development in the City of Chesapeake to be constructed. Utilities are being extended from Elbow Road. The proposed development will include two connections to Elbow Road and several side streets. The two connection points to Elbow Road are required by city code to allow for access in case one entrance is blocked.

The wetlands onsite are found along the northern perimeter of the proposed project. These areas are nontidal forested wetland areas (PFO). As shown on the design plans, the proposed house lots do not encroach into the wetlands. There are no proposed impacts to these wetland areas as part of this development.

From a hydrological standpoint, the wetlands flow to the south through a series of farm ditches. These ditches interconnect through farmed fields and flow to one outfall point through a culvert under Elbow Road. Approximately 15 years ago, the two stormwater management ponds that are located on the site were excavated from uplands. The ponds were designed and located so that the existing farm ditches would flow into them. One pond is located on the northwestern corner of the site and the other on the southeastern corner of the site. The purpose of the ponds was to aid in the removal of sediment from the stormwater within the site and stormwater that leaves the site. We have shown these ponds on the wetland delineation maps.

The jurisdictional farm ditches on the site interconnect the wetlands to the north of the project area to other jurisdictional features (wetlands and streams) to the south of Elbow Road. The jurisdictional ditches are shown on the wetland delineation drawing and the permit drawings and have been confirmed by the Corps of Engineers.

The impacts to jurisdictional areas on the site include:

- 2,620 linear feet of unvegetated forested ditches through uplands.
- 3,155 linear feet of unvegetated ditches through farmed fields (uplands).
- 900 linear feet of ditches that contain emergent vegetation.
- 0.16 acres of impacts to the stormwater management ponds excavated from upland areas.

Although these ditches will be impacted, the connection between the wetlands to the north of the project site and the jurisdictional features south of Elbow Road will be maintained. This will be through a series of ditches, culvert pipes, and stormwater management ponds. The flow through the outfall at Elbow Road will be maintained and there will not be a reduction in hydrology to the downstream resources.

Mitigation

The existing ditches within the project area have a limited ecological value to the area. The majority of the ditches are unvegetated or sparsely vegetated features. They are “straight line” conveyances of stormwater through the site. As the ditches allow stormwater to concentrate and flow through the site with little interaction with plants, there is minimal potential removal of nutrients or pesticides from the farm fields. Being that they do not have variability in depth or sinuosity, there is also minimal potential for them to reduce sediment loads that leave the property through the stormwater.

The ditches onsite continually flush during rain events. The ditches in the fields are predominantly unvegetated features are routinely maintained as part of the field plowing.

The proposed development will maintain the connection between upstream wetlands and downstream resources. As part of the development plans, portions of the ditches will be piped while others are relocated. The important feature of the drainage system will be the continuous connection of the wetlands on-site to the downstream aquatic features.

The two existing stormwater ponds located on the project site were both excavated from uplands. As they treat stormwater that flows through the jurisdictional ditches, and therefore have been claimed as jurisdictional features as part of the wetland delineation. The functions of these ponds will be replaced by three larger stormwater management ponds. The new ponds will be engineered to significantly reduce the pollutants that originate from the property. This will be accomplished by interacting the stormwater with wetland plants and holding the stormwater for extended periods of time so that the vegetation has the opportunity to absorb nitrogen and phosphorus.

The proposed stormwater management ponds will also remove far more sediment than the existing ponds and ditches. This will be accomplished using forebays as the stormwater enters the ponds and holding the stormwater for extended periods of time to allow the suspended solids to settle out. The extended detention will allow the stormwater ponds to discharge the

stormwater as pre-development rates. The stormwater that discharges the site post development will be far cleaner than the stormwater that discharges from it currently.

An additional benefit to the environment is the removal of 33.5-acres of farm fields from operation. This will reduce fertilizers, pesticides, and herbicides that are currently used on the fields. These pollutants currently are applied at least twice a year with the rotation of the crops. With each rainfall event, they are washed downstream into the ditches. As the ditches allow direct flow through the site, the pollutants are discharged directly to the downstream aquatic resources. By eliminating the agricultural application of these fertilizers and chemicals, the offsite stormwater discharge will be improved.

As the existing farm ditches and stormwater ponds provide very limited functions to the environment, the benefits of the proposed project adequately mitigates the impacts. With this improved overall function and the maintained connection of onsite wetlands to downstream resources, no mitigation is proposed to replace the impacts to the ditches and stormwater ponds.

PLEASE PRINT OR TYPE ALL ANSWERS. If a question does not apply to your project, please print N/A (not applicable) in the space provided. If additional space is needed, attach extra 8 1/2 x 11 inch sheets of paper.

CHECK ONE, if applicable:	Pre-Construction Notification (PCN) <input type="checkbox"/> (For Nationwide Permits ONLY)	SPGP <input type="checkbox"/>
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1. PROJECT LOCATION INFORMATION
(Attach a copy of a detailed map, such as a USGS topographic map or street map showing the site location and project boundary, so that it may be located for inspection. Include an arrow indicating the north direction.)

Street Address <u>2014 ELBOW ROAD</u>	City/County/Zipcode <u>CHESAPEAKE, VA 23320</u>
Subdivision <u>N/A</u>	Lot/Block/Parcel # <u>0390000000382 + A PORTION OF 0390000000380</u>

Name of water body(ies) within project boundaries and drainage area (acres or square miles)
UNNAMED DITCHES

Tributary(ies) to: ALBEMARLE CHESAPEAKE CANAL
Basin: ALBEMARLE CANAL Subbasin: NORTH LANDING RIVER
(Example: Basin: James River Subbasin: Middle James River)

Special Standards (based on DEQ Water Quality Standards 9VAC25-260 et seq.): N/A

Project type (check one) ☒ Single user (private, non-commercial, residential)
☐ Multi-user (community, commercial, industrial, government)

Latitude and longitude at center of project site: 36 - 44 - 42 / 76 - 10 - 00

USGS topographic map name: FENTRESS, VA

8- digit USGS Hydrologic Unit Code (HUC) for your project site (See <http://cfpub.epa.gov/surf/locate/index.cfm>):
If known, indicate the 10-digit and 12-digit USGS HUCs (see <http://dswcapps.dcr.virginia.gov/htdocs/maps/HUCExplorer.htm>):
D3010205

Name of your project (Example: Water Creek driveway crossing) ELBOW ROAD FARM FIELD DEVELOPMENT

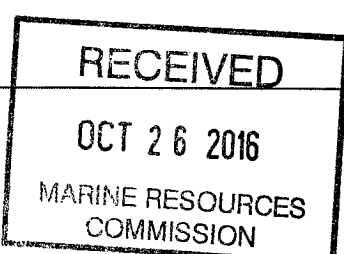
Is there an access road to the project? ☒ Yes ☐ No. If yes, check all that apply: ☒ public ☐ private ☒ improved ☐ unimproved

Provide driving directions to your site, giving distances from the best and nearest visible landmarks or major intersections:
FROM THE INTERSECTION OF ELBOW ROAD AND CENTERVILLE TURNPIKE, PROCEED ONE MILE EAST ON ELBOW ROAD. THE SITE ENTRANCE IS ON THE LEFT.

Does your project site cross boundaries of two or more localities (i.e. cities/counties/towns)? Yes ☐ No ☒
If so, name those localities:

FOR AGENCY USE ONLY

Notes:
JPA# <u>16-1737</u>



2. APPLICANT, AGENT, PROPERTY OWNER, AND CONTRACTOR INFORMATION

The applicant(s) is/are the legal entity to which the permit may be issued. The applicant(s) can either be the property owner(s) or the person/people/company(ies) that intend(s) to undertake the activity. The agent is the person or company that is representing the applicant(s). If a company, please use the company name that is registered with the State Corporation Commission (SCC), or indicate no registration with the SCC.

Applicant(s) (For a company, use SCC-registered name) T21-CITY PROPERTIES, LLC				Agent (if applicable) (For a company, use SCC-registered name) ROTH ENVIRONMENTAL, LLC			
Mailing address 3333-24 VIRGINIA BEACH BLVD				Mailing address 700 PRESCOTT CIRCLE			
City VIRGINIA BEACH		State VA	Zip Code 23452	City NEWPORT NEWS		State VA	Zip Code 23602
Phone number w/area code (757) 340-9001		Fax		Phone number w/area code (757) 814-1048		Fax (757) 249-2257	
Mobile/pager		E-mail mfgabardi@esgcd.com		Mobile/pager		E-mail rothenv@cox.net	
State Corporation Commission ID number (if applicable) 5031890-9				State Corporation Commission ID number (if applicable) 56-2597927			
Certain permits or permit authorizations may be provided via electronic mail. If the applicant wishes to receive their permit via electronic mail, please provide an e-mail address here: rothenv@cox.net							
Property owner(s), if different from applicant (For a company, use SCC-registered name) SAME				Contractor, if known (For a company, use SCC-registered name) UNKNOWN			
Mailing address				Mailing address			
City		State	Zip code	City		State	Zip code
Phone number w/area code		Fax		Phone number w/area code		Fax	
Mobile/pager		E-mail		Mobile/pager		E-mail	
State Corporation Commission ID number (if applicable)				State Corporation Commission ID number (if applicable)			

3. PROVIDE A DESCRIPTION OF THE PROJECT, PROJECT PRIMARY AND SECONDARY PURPOSES, PROJECT NEED, INTENDED USE, AND ALTERNATIVES CONSIDERED (Attach additional sheets if necessary)

- The purpose must include any new development or expansion of an existing land use and/or proposed future use of residual land
- Describe the physical alteration of surface waters
- Include a description of alternatives considered to avoid or minimize impacts to surface waters, including wetlands, to the maximum extent practicable. Include factors such as, but not limited to, alternative construction technologies, alternative project layout and design, alternative locations, local land use regulations, and existing infrastructure
- For utility crossings, include both alternative routes and alternative construction methodologies considered
- For major surface water withdrawals, public surface water supply withdrawals, or projects that will alter in-stream flows, include the water supply issues that form the basis of the proposed project.

SEE PROJECT DESCRIPTION

3. PROVIDE A DESCRIPTION OF THE PROJECT (Continued)

Date of proposed commencement of work (MM/DD/YYYY) <u>08/01/2017</u>	Date of proposed completion of work (MM/DD/YYYY) <u>08/01/2020</u>
Are you submitting this application at the direction of any State, local, or Federal agency? <u>Yes</u> <input checked="" type="checkbox"/> <u>No</u>	Has any work commenced or has any portion of the project for which you are seeking a permit been completed? <u>Yes</u> <input checked="" type="checkbox"/> <u>No</u>
<p>If you answered "yes" to either question above, give details stating when the work was completed and/or when it commenced, who performed the work, and which agency (if any) directed you to submit this application. In addition, you will need to clearly differentiate between completed work and proposed work on your project drawings.</p>	
<p>Are you aware of any unresolved violations of environmental law or litigation involving the property? <u>Yes</u> <input checked="" type="checkbox"/> <u>No</u> (If yes, please explain)</p>	

4. PREVIOUS SITE VISITS AND/OR PERMITS RELATED TO THE PROPOSED WORK (Include all Federal, State, and Local pre-application coordination or previous permits)

Agency	Activity	Permit/Project number, and explanation of non-reporting Nationwide permits previously used	Action taken ** and Date of Action	If denied, give reason for denial
USACE	APPROVED JD	NAD-2016-0712	APPROVED	
VDNR	WETLAND PERMIT	VWP INDIVIDUAL PERMIT #00-1688	PERMITTED	

** Issued, denied, site visit

5. PROJECT COSTS

Approximate cost of the entire project, including materials and labor: \$ 15,000,000

Approximate cost of only the portion of the project affecting State waters (below mean low water in tidal areas and below ordinary high water mark in nontidal areas): \$ 150,000

6. PUBLIC NOTIFICATION (Attach additional sheets if necessary)

- Complete information for all property owners adjacent to the project site and across the waterway, if the waterway is less than 500 feet in width. If your project is located within a cove, you will need to provide names and mailing addresses for all property owners within the cove.
- If you own the adjacent lot, provide the requested information for the first adjacent parcel beyond your property line.

Property owner's name	Mailing address	City	State	Zip code

Name of newspaper having general circulation in the area of the project: THE VIRGINIAN PILOT
Address and phone number (including area code) of newspaper: 150 W. BRAMBLETON AVENUE, NORFOLK, VA 23410 (757) 446-2314

Have adjacent property owners been notified with forms in Appendix A? ☐ Yes ☒ No (attach copies of distributed forms)

7. THREATENED AND ENDANGERED SPECIES INFORMATION

Please provide any information concerning the potential for your project to impact state and/or federally threatened and endangered species (listed or proposed). Attach correspondence from agencies and/or reference materials that address potential impacts, such as database search results or your Corps' waters and wetlands delineation confirmation. Contact information for the Virginia Department of Game and Inland Fisheries and the Virginia Department of Conservation and Recreation, Division of Natural Heritage can be found on page 4 of this package.

8. HISTORIC RESOURCES INFORMATION

Note: Historic properties include but are not limited to archeological sites, battlefields, Civil War earthworks, graveyards, buildings, bridges, canals, etc. Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.

Are any historic properties located within or adjacent to the project site? ☒ Yes ☐ No ☐ Uncertain
If Yes, please provide a map showing the location of the historic property within or adjacent to the project site.

Are there any buildings or structures 50 years old or older located on the project site? ☐ Yes ☒ No ☐ Uncertain
If Yes, please provide a map showing the location of these buildings or structures on the project site.

Is your project located within a historic district? ☐ Yes ☒ No ☐ Uncertain
If Yes, please indicate which district: _____

8. HISTORIC RESOURCES INFORMATION (Continued)

Has a survey to locate archeological sites and/or historic structures been carried out on the property?

☒ Yes ☐ No ☐ UncertainIf Yes, please provide the following information: Date of Survey: AUGUST 2006Name of firm: CCR, INC.Is there a report on file with the Virginia Department of Historic Resources? ☒ Yes ☐ No ☐ UncertainTitle of Cultural Resources Management (CRM) report: ARCHAEOLOGICAL + ARCHITECTURAL SURVEY - PROPOSEDWas any historic property located? ☐ Yes ☒ No ☐ UncertainSOUTHEASTERN PARKWAY + GREENBELT

9. WETLANDS, WATERS, AND DUNES/BEACHES IMPACT INFORMATION

Report each impact site in a separate column. If needed, attach additional sheets using a similar table format. Please ensure that the associated project drawings clearly depict the location and footprint of each numbered impact site. For dredging, mining, and excavating projects, use Section 18.

	Impact site number 1	Impact site number 2	Impact site number 3
Impact description (use all that apply): F=fill EX=excavation S=Structure T=tidal NT=non-tidal TE=temporary PE=permanent PR=perennial IN=intermittent SB=subaqueous bottom DB=dune/beach IS=hydrologically isolated V=vegetated NV=non-vegetated MC=Mechanized Clearing of PFO (Example: F, NT, PE, V)	F, NT, PE, NV NONVEGETATED FORESTED FARM DITCHES THROUGH UPLANDS 2620 LF.	NT, PE, V SPARSELY VEGETATED FARM DITCHES THROUGH UPLANDS 900 LF.	NT, PE, NV NONVEGETATED FARM FIELD DITCHES THROUGH UPLANDS 3155 LF.
Wetland/waters impact area (square feet)	78600 ±	2700 ±	7887 ±
Dune/beach impact area (square feet)	0	0	0
Stream dimensions at impact site (length and average width in linear feet, and area in square feet)	N/A	N/A	N/A
Volume of fill below Mean High Water or Ordinary High Water (cubic yards)	145 CY	50 CY	145 CY
Cowardin classification of impacted wetland/water or geomorphological classification of stream Example wetland: PFO; Example stream: wide; bank eroding; braided channel; Example stream: 'C' channel	PFO	PEM	R4UB
Average stream flow at site (flow rate under normal rainfall conditions in cubic feet per second)	<2 cfs	<2 cfs	<2 cfs
Contributing drainage area (acres or square miles)	130 AC	130 AC	130 AC

9. WETLANDS/WATERS IMPACT INFORMATION (Continued)

DEQ classification of impacted resource(s): Estuarine Class II Non-tidal waters Class III Mountainous zone waters Class IV Stockable trout waters Class V Natural trout waters Class VI Wetlands Class VII	1 II	2 II	3 II
For DEQ permitting purposes, also submit as part of this section a wetland and waters boundary delineation map ⁽¹⁾ – see the Footnotes section in the form instructions.			
For DEQ permitting purposes, also submit as part of this section a written disclosure of all wetlands, open water, or streams that are located within the proposed project or compensation areas that are also under a deed restriction, conservation easement, restrictive covenant, or other land-use protective instrument.			

10. APPLICANT, AGENT, OWNER, AND CONTRACTOR CERTIFICATIONS

If the Applicant(s), Agent(s), Owner(s), or Contractor(s) is/are a company, please use the company name(s) that is/are registered with the State Corporation Commission (SCC).

READ ALL OF THE FOLLOWING CAREFULLY BEFORE SIGNING

PRIVACY ACT STATEMENT: The Department of the Army permit program is authorized by Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, and Section 103 of the Marine Protection Research and Sanctuaries Act of 1972. These laws require that individuals obtain permits that authorize structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters prior to undertaking the activity. Information provided in the Joint Permit Application will be used in the permit review process and is a matter of public record once the application is filed. Disclosure of the requested information is voluntary, but it may not be possible to evaluate the permit application or to issue a permit if the information requested is not provided.

CERTIFICATION: I am hereby applying for permits typically issued by the DEQ, VMRC, U.S. Army Corps of Engineers, and/or Local Wetlands Boards for the activities I have described herein. I agree to allow the duly authorized representatives of any regulatory or advisory agency to enter upon the premises of the project site at reasonable times to inspect and photograph site conditions, both in reviewing a proposal to issue a permit and after permit issuance to determine compliance with the permit.

In addition, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Is/Are the Applicant(s) and Owner(s) the same? ☒ Yes ☐ No

Applicant's name & title (printed or typed) MICHAEL GELARDI - MANAGER Vice President	Second applicant's name & title, if applicable (printed or typed)
Applicant's signature <i>Michael Gelardi</i>	Second applicant's signature
Date 10/26/16	Date
(Required for VMRC permit actions only) Property owner's name, if different from Applicant	(Required for VMRC permit actions only) Second property owner's name, if applicable
Owner's signature, if different from Applicant	Second owner's signature
Date	Date

8. HISTORIC RESOURCES INFORMATION (Continued)

Has a survey to locate archeological sites and/or historic structures been carried out on the property?
☐ Yes ☐ No ☐ Uncertain

If Yes, please provide the following information: Date of Survey: _____

Name of firm: _____

Is there a report on file with the Virginia Department of Historic Resources? ☐ Yes ☐ No ☐ Uncertain

Title of Cultural Resources Management (CRM) report: _____

Was any historic property located? ☐ Yes ☐ No ☐ Uncertain

9. WETLANDS, WATERS, AND DUNES/BEACHES IMPACT INFORMATION

Report each impact site in a separate column. If needed, attach additional sheets using a similar table format. Please ensure that the associated project drawings clearly depict the location and footprint of each numbered impact site. For dredging, mining, and excavating projects, use Section 18.

	Impact site number 4	Impact site number	Impact site number
Impact description (use all that apply): F=fill EX=excavation S=Structure T=tidal NT=non-tidal TE=temporary PE=permanent PR=perennial IN=intermittent SB=subaqueous bottom DB=dune/beach IS=hydrologically isolated V=vegetated NV=non-vegetated MC=Mechanized Clearing of PFO (Example: F, NT, PE, V)	F, NT, PE, NV STORMWATER PONDS EXCAVATED FROM UPLANDS		
Wetland/waters impact area (square feet)	6970 #		
Dune/beach impact area (square feet)	0		
Stream dimensions at impact site (length and average width in linear feet, and area in square feet)	N/A		
Volume of fill below Mean High Water or Ordinary High Water (cubic yards)	1032 cy		
Cowardin classification of impacted wetland/water or geomorphological classification of stream Example wetland: PFO; Example stream: wide; bank eroding; braided channel; Example stream: 'C' channel	PUBHx		
Average stream flow at site (flow rate under normal rainfall conditions in cubic feet per second)	<2 cfs		
Contributing drainage area (acres or square miles)	130 ac		

9. WETLANDS/WATERS IMPACT INFORMATION (Continued)

DEQ classification of impacted resource(s):

Estuarine Class II
Non-tidal waters Class III
Mountainous zone waters Class IV
Stockable trout waters Class V
Natural trout waters Class VI
Wetlands Class VII

4

II

For DEQ permitting purposes, also submit as part of this section a wetland and waters boundary delineation map⁽⁴⁾ – see the Footnotes section in the form instructions.

For DEQ permitting purposes, also submit as part of this section a written disclosure of all wetlands, open water, or streams that are located within the proposed project or compensation areas that are also under a deed restriction, conservation easement, restrictive covenant, or other land-use protective instrument.

10. APPLICANT, AGENT, OWNER, AND CONTRACTOR CERTIFICATIONS

If the Applicant(s), Agent(s), Owner(s), or Contractor(s) is/are a company, please use the company name(s) that is/are registered with the State Corporation Commission (SCC).

READ ALL OF THE FOLLOWING CAREFULLY BEFORE SIGNING

PRIVACY ACT STATEMENT: The Department of the Army permit program is authorized by Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, and Section 103 of the Marine Protection Research and Sanctuaries Act of 1972. These laws require that individuals obtain permits that authorize structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters prior to undertaking the activity. Information provided in the Joint Permit Application will be used in the permit review process and is a matter of public record once the application is filed. Disclosure of the requested information is voluntary, but it may not be possible to evaluate the permit application or to issue a permit if the information requested is not provided.

CERTIFICATION: I am hereby applying for permits typically issued by the DEQ, VMRC, U.S. Army Corps of Engineers, and/or Local Wetlands Boards for the activities I have described herein. I agree to allow the duly authorized representatives of any regulatory or advisory agency to enter upon the premises of the project site at reasonable times to inspect and photograph site conditions, both in reviewing a proposal to issue a permit and after permit issuance to determine compliance with the permit.

In addition, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Is/Are the Applicant(s) and Owner(s) the same? ☐ Yes ☐ No

Applicant's name & title (printed or typed)

Second applicant's name & title, if applicable (printed or typed)

Applicant's signature

Second applicant's signature

Date

Date

(Required for VMRC permit actions only)

Property owner's name, if different from Applicant

(Required for VMRC permit actions only)

Second property owner's name, if applicable

Owner's signature, if different from Applicant

Second owner's signature

Date

Date

10. APPLICANT, AGENT, OWNER, AND CONTRACTOR CERTIFICATIONS (Continued)

If the Applicant(s), Agent(s), Owner(s), or Contractor(s) is/are a company, please use the company name(s) that is/are registered with the State Corporation Commission (SCC).

CERTIFICATION OF AUTHORIZATION TO ALLOW AGENT(S) TO ACT ON APPLICANT(S)'S BEHALF (IF APPLICABLE)

I (we), T21-CITY PROPERTIES (and) _____
 APPLICANT'S NAME(S) – complete the second blank if more than one Applicant

hereby certify that I (we) have authorized ROTH ENVIRONMENTAL (and) _____
 AGENT'S NAME(S) – complete the second blank if more than one Agent

to act on my (our) behalf and take all actions necessary to the processing, issuance, and acceptance of this permit and any and all standard and special conditions attached. I (we) hereby certify that the information submitted in this application is true and accurate to the best of my (our) knowledge.

Applicant's signature <u>Mr. Z. Haldi</u>	Second applicant's signature, if applicable
Date <u>10/26/15</u>	Date
Agent's signature and title <u>[Signature]</u>	Second agent's signature and title, if applicable
Date <u>10/25/16</u>	Date

CONTRACTOR ACKNOWLEDGEMENT (IF APPLICABLE)

I (we), NOT SELECTED (and) _____
 APPLICANT'S NAME(S) – complete the second blank if more than one Applicant

have contracted _____ (and) _____
 CONTRACTOR'S NAME(S) – complete the second blank if more than one Contractor

to perform the work described in this Joint Permit Application, signed and dated _____.

I (we) will read and abide by all conditions as set forth in all Federal, State, and Local permits as required for this project. I (we) understand that failure to follow the conditions of the permits may constitute a violation of applicable Federal, State, and Local statutes and that we will be liable for any civil and/or criminal penalties imposed by these statutes.

In addition, I (we) agree to make available a copy of any permit to any regulatory representative visiting the project site to ensure permit compliance. If I (we) fail to provide the applicable permit upon request, I (we) understand that the representative will have the option of stopping our operation until it has been determined that we have a properly signed and executed permit and are in full compliance with all of the terms and conditions.

Contractor's name or name of firm (printed/typed)	Contractor's or firm's mailing address	
Contractor's signature and title	Contractor's license number	Date
Applicant's signature	Second applicant's signature, if applicable	
Date	Date	



END OF GENERAL INFORMATION

The following sections are activity-specific. Fill out only the sections that apply to your particular project.

IMPACT AREA 1

FORESTED/NOVEGETATED FARM DITCHES THROUGH UPLANDS

19. FILL (not associated with backfilled shoreline structures) AND OTHER STRUCTURES (other than piers and boathouses) IN WETLANDS OR WATERS, OR ON DUNES/BEACHES

Source and composition of fill material (percentage sand, silt, clay, rock): ONSITE FILL MATERIAL FROM STORMWATER POND EXCAVATION 50% LOAM; 30% SAND; 20% CLAY

Provide documentation (i.e. laboratory results or analytical reports) that fill material from off-site locations is free of toxics. If not free of toxics, provide documentation of proper disposal (i.e. bill of lading from commercial supplier or disposal site). Documentation is not necessary for fill material obtained from on-site areas. N/A

Explain the purpose of the filling activity and the type of structure to be constructed over the filled area (if any):

DITCHES FILLED TO CREATE SUBDIVISION -

Describe any structure that will be placed in wetlands/waters or on a beach dune and its purpose:

NONE

Will the structure be placed on pilings? N/A Yes ☐ No ☐

Total area occupied by any structure.

N/A Square Feet

How far will the structure be placed channelward from the back edge of the dune? N/A feet

How far will the structure be placed channelward from the back edge of the beach? N/A feet

20. NONTIDAL STREAM CHANNEL MODIFICATIONS FOR RESTORATION OR ENHANCEMENT, or TEMPORARY OR PERMANENT RELOCATIONS

If proposed activities are being conducted for the purposes of compensatory mitigation, please attach separate sheets of paper providing all information required by the most recent version of the stream assessment methodology approved by the Norfolk District of the U.S. Army Corps of Engineers and the Virginia Department of Environmental Quality, in lieu of completing the questions below. Required information outlined by the methodology can be found at: <http://www.nao.usace.army.mil/Missions/Regulatory/UnifiedStreamMethodology.aspx> or <http://www.deq.virginia.gov/Programs/Water/WetlandsStreams/Mitigation.aspx>

Has the stream restoration project been designed by a local, state, or federal agency? ☐ Yes ☐ No. If yes, please include the name of the agency here: _____

Is the agency also providing funding for this project? ☐ Yes ☐ No

Linear feet of stream impact: _____

Contributing drainage area: _____ acres or _____ square miles

Existing average stream flow at site (flow rate under normal rainfall conditions): _____ cfs

Proposed average stream flow at site after modifications (flow rate under normal rainfall conditions): _____ cfs

Explain, in detail, the method to be used to stabilize the banks:

Explain the composition of the existing stream bed (percent cobble, rock, sand, etc.):

IMPACT AREA 2
SPARSELY VEGETATED FARM DITCHES THROUGH UPLANDS

19. FILL (not associated with backfilled shoreline structures) AND OTHER STRUCTURES (other than piers and boathouses) IN WETLANDS OR WATERS, OR ON DUNES/BEACHES	
Source and composition of fill material (percentage sand, silt, clay, rock): <u>DNSITE FILL MATERIAL FROM STORMWATER POND EXCAVATION - 50% LOAM; 30% SAND; 20% CLAY</u>	
Provide documentation (i.e. laboratory results or analytical reports) that fill material from off-site locations is free of toxics. If not free of toxics, provide documentation of proper disposal (i.e. bill of lading from commercial supplier or disposal site). Documentation is not necessary for fill material obtained from on-site areas. <u>N/A</u>	
Explain the purpose of the filling activity and the type of structure to be constructed over the filled area (if any): <u>DITCHES FILLED TO CREATE SUBDIVISION</u>	
Describe any structure that will be placed in wetlands/waters or on a beach dune and its purpose: <u>NONE</u>	
Will the structure be placed on pilings? <u>N/A</u> Yes <input type="checkbox"/> No <input type="checkbox"/>	Total area occupied by any structure. <u>N/A</u> Square Feet
How far will the structure be placed channelward from the back edge of the dune? <u>N/A</u> feet	How far will the structure be placed channelward from the back edge of the beach? <u>N/A</u> feet

20. NONTIDAL STREAM CHANNEL MODIFICATIONS FOR RESTORATION OR ENHANCEMENT, or TEMPORARY OR PERMANENT RELOCATIONS	
<i>If proposed activities are being conducted for the purposes of compensatory mitigation, please attach separate sheets of paper providing all information required by the most recent version of the stream assessment methodology approved by the Norfolk District of the U.S. Army Corps of Engineers and the Virginia Department of Environmental Quality, in lieu of completing the questions below. Required information outlined by the methodology can be found at:</i> http://www.nao.usace.army.mil/Missions/Regulatory/UnifiedStreamMethodology.aspx or http://www.deq.virginia.gov/Programs/Water/WetlandsStreams/Mitigation.aspx	
Has the stream restoration project been designed by a local, state, or federal agency? <input type="checkbox"/> Yes <input type="checkbox"/> No. If yes, please include the name of the agency here: _____	
Is the agency also providing funding for this project? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Linear feet of stream impact: _____	
Contributing drainage area: _____ acres or _____ square miles	
Existing average stream flow at site (flow rate under normal rainfall conditions): _____ cfs	Proposed average stream flow at site after modifications (flow rate under normal rainfall conditions): _____ cfs
Explain, in detail, the method to be used to stabilize the banks: 	
Explain the composition of the existing stream bed (percent cobble, rock, sand, etc.): 	

IMPACT AREA 3 NONVEGETATED FARM DITCHES THROUGH UPLANDS

19. FILL (not associated with backfilled shoreline structures) AND OTHER STRUCTURES (other than piers and boathouses) IN WETLANDS OR WATERS, OR ON DUNES/BEACHES

Source and composition of fill material (percentage sand, silt, clay, rock): ONSITE FILL MATERIAL FROM STREAMWATER POND EXCAVATION - 50% LOAM; 30% SAND; 20% CLAY

Provide documentation (i.e. laboratory results or analytical reports) that fill material from off-site locations is free of toxics. If not free of toxics, provide documentation of proper disposal (i.e. bill of lading from commercial supplier or disposal site). Documentation is not necessary for fill material obtained from on-site areas. N/A

Explain the purpose of the filling activity and the type of structure to be constructed over the filled area (if any):

DITCHES FILL TO CREATE SUBDIVISION

Describe any structure that will be placed in wetlands/waters or on a beach dune and its purpose:

NONE

Will the structure be placed on pilings? N/A Yes ☐ No ☐

Total area occupied by any structure. N/A Square Feet

How far will the structure be placed channelward from the back edge of the dune? N/A feet

How far will the structure be placed channelward from the back edge of the beach? N/A feet

20. NONTIDAL STREAM CHANNEL MODIFICATIONS FOR RESTORATION OR ENHANCEMENT, or TEMPORARY OR PERMANENT RELOCATIONS

If proposed activities are being conducted for the purposes of compensatory mitigation, please attach separate sheets of paper providing all information required by the most recent version of the stream assessment methodology approved by the Norfolk District of the U.S. Army Corps of Engineers and the Virginia Department of Environmental Quality, in lieu of completing the questions below. Required information outlined by the methodology can be found at: <http://www.nao.usace.army.mil/Missions/Regulatory/UnifiedStreamMethodology.aspx> or <http://www.deq.virginia.gov/Programs/Water/WetlandsStreams/Mitigation.aspx>.

Has the stream restoration project been designed by a local, state, or federal agency? ☐ Yes ☐ No. If yes, please include the name of the agency here: _____

Is the agency also providing funding for this project? ☐ Yes ☐ No

Linear feet of stream impact: _____

Contributing drainage area: _____ acres or _____ square miles

Existing average stream flow at site (flow rate under normal rainfall conditions): _____ cfs

Proposed average stream flow at site after modifications (flow rate under normal rainfall conditions): _____ cfs

Explain, in detail, the method to be used to stabilize the banks:

Explain the composition of the existing stream bed (percent cobble, rock, sand, etc.):

IMPACT AREA 4

STORMWATER PONDS EXCAVATED FROM UPLANDS

19. FILL (not associated with backfilled shoreline structures) AND OTHER STRUCTURES (other than piers and boathouses) IN WETLANDS OR WATERS, OR ON DUNES/BEACHES

Source and composition of fill material (percentage sand, silt, clay, rock): ON-SITE FILL MATERIAL FROM STORMWATER POND EXCAVATION - 50% LOAM; 30% SAND; 20% CLAY

Provide documentation (i.e. laboratory results or analytical reports) that fill material from off-site locations is free of toxics. If not free of toxics, provide documentation of proper disposal (i.e. bill of lading from commercial supplier or disposal site). Documentation is not necessary for fill material obtained from on-site areas. N/A

Explain the purpose of the filling activity and the type of structure to be constructed over the filled area (if any):

DITCHES FILLED TO CREATE SUBDIVISION

Describe any structure that will be placed in wetlands/waters or on a beach dune and its purpose:

NONE

Will the structure be placed on pilings? N/A Yes ☐ No ☐

Total area occupied by any structure.
N/A Square Feet

How far will the structure be placed channelward from the back edge of the dune? N/A feet

How far will the structure be placed channelward from the back edge of the beach? N/A feet

20. NONTIDAL STREAM CHANNEL MODIFICATIONS FOR RESTORATION OR ENHANCEMENT, or TEMPORARY OR PERMANENT RELOCATIONS

If proposed activities are being conducted for the purposes of compensatory mitigation, please attach separate sheets of paper providing all information required by the most recent version of the stream assessment methodology approved by the Norfolk District of the U.S. Army Corps of Engineers and the Virginia Department of Environmental Quality, in lieu of completing the questions below. Required information outlined by the methodology can be found at:
<http://www.nao.usace.army.mil/Missions/Regulatory/UnifiedStreamMethodology.aspx> or
<http://www.deq.virginia.gov/Programs/Water/WetlandsStreams/Mitigation.aspx>

Has the stream restoration project been designed by a local, state, or federal agency? ☐ Yes ☐ No. If yes, please include the name of the agency here: _____

Is the agency also providing funding for this project? ☐ Yes ☐ No

Linear feet of stream impact: _____

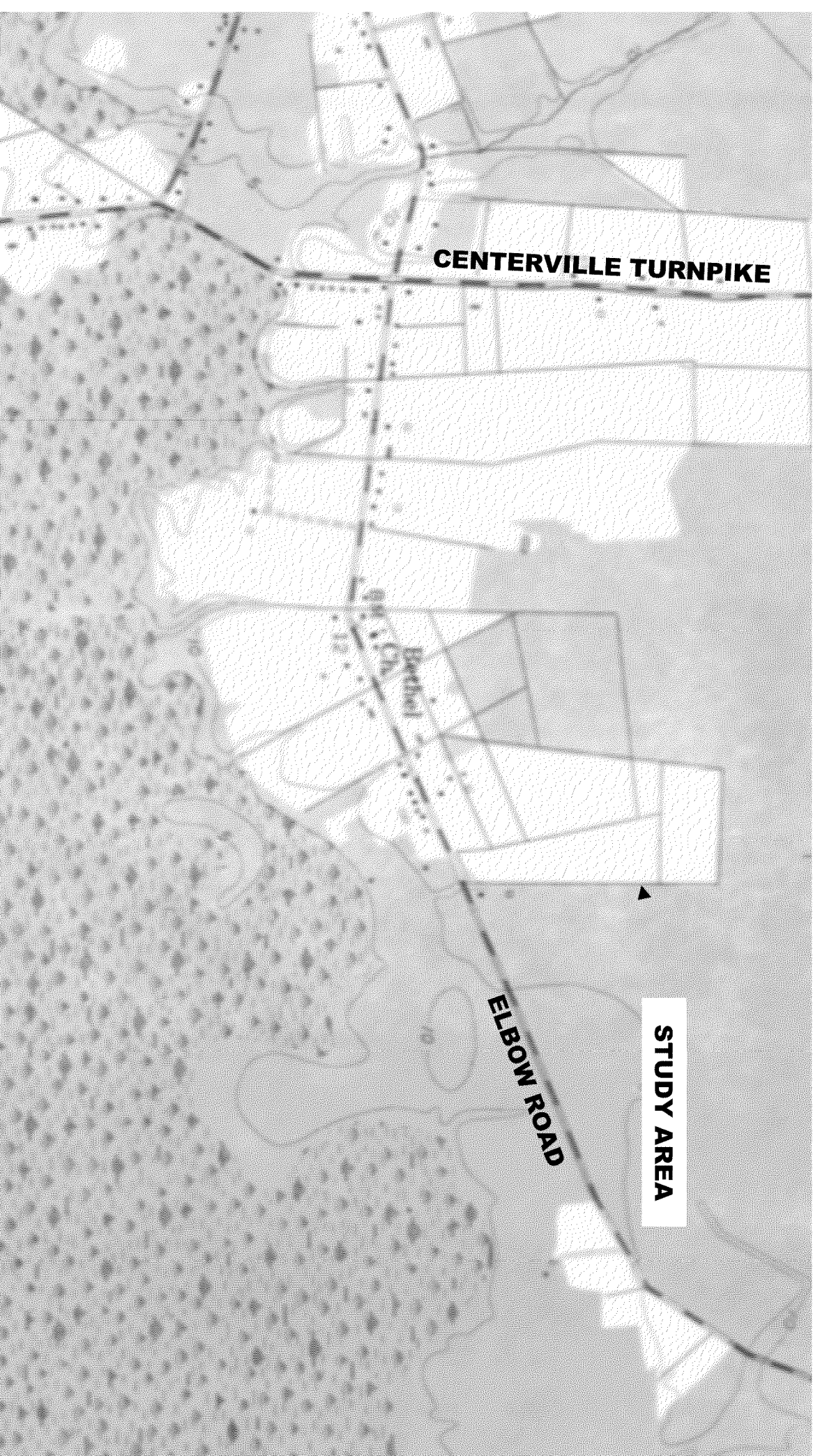
Contributing drainage area: _____ acres or _____ square miles

Existing average stream flow at site (flow rate under normal rainfall conditions): _____ cfs

Proposed average stream flow at site after modifications (flow rate under normal rainfall conditions): _____ cfs

Explain, in detail, the method to be used to stabilize the banks:

Explain the composition of the existing stream bed (percent cobble, rock, sand, etc.):



VICINITY MAP

**ELBOW ROAD FARM FIELD PROPERTY
CHESAPEAKE, VIRGINIA**

SEPTEMBER 7, 2016

ROTH ENVIRONMENTAL, LLC

**SOURCE: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC MAP – FENTRESS, VA**



ROTH ENVIRONMENTAL, LLC

ELBOW ROAD FARM FIELD PROJECT
THREATENED AND ENDANGERED SPECIES REVIEW
CHESAPEAKE, VIRGINIA
RE PROJECT #06-006
OCTOBER 12, 2016

Roth Environmental performed an IPaC Review through the Fish & Wildlife Service. This report identified the Northern Long Eared Bat (federally threatened) as a species with summer habitat in the project area.

In addition, the Virginia Department of Game and Inland Fisheries (VDGIF) Environmental Services Section (ESS) was researched to provide information on state threatened and endangered species. The state database found several species of concern within the project area. Species that could potentially use the site as habitat are discussed below.

Northern Long-Eared Bat - (*Myotis septentrionalis*)

Federally Threatened - The northern long-eared bat is a medium-sized bat with a body length of 3 to 3.7 inches and a wingspan of 9 to 10 inches. Their fur color can be medium to dark brown on the back and tawny to pale-brown on the underside.

The northern long-eared bat is federally listed as a threatened species under the Endangered Species Act. Threatened species are animals and plants that are likely to become endangered in the foreseeable future. Identifying, protecting, and restoring endangered and threatened species is the primary objective of the U.S. Fish and Wildlife Service's endangered species program. The City of Newport News is identified as a White-Nosed Syndrome Buffer Zone Per Interim 4(d) Rule.

Winter Habitat: Northern long-eared bats spend winter hibernating in caves and mines, called hibernacula. They use areas in various sized caves or mines with constant temperatures, high humidity, and no air currents. Within hibernacula, surveyors find them hibernating most often in small crevices or cracks, often with only the nose and ears visible.

Summer Habitat: During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Males and non-reproductive females may also roost in cooler places, like caves and mines. Northern long-eared bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. This bat has also been found rarely roosting in structures, like barns and sheds.

The proposed project does not contain any areas that could be used as hibernacula (caves, mine shafts, or similar habitat). The habitat type in the area is a coastal plain flat. There

is little natural topography in the project area. Therefore, the property is not appropriate winter habitat for the bats. The areas of mature forest could potentially be used as summer/breeding habitat for the bats as they are documented to live underneath bark, in tree cavities, and in crevices in mature trees. There are, however, no known roost trees within the site.

As the project will involve clearing approximately 4.5-acres of forested areas, there are areas in which an incidental take could potentially happen if the northern long eared bat was roosting on the site.

The applicant anticipates that they will perform land-clearing activities during the summer season. We are requesting that the agencies coordinate with the FWS to remove any time of year restrictions for the land clearing activity.

Barking Tree Frog (*Hyla gratiosa*)

State Threatened - Choruses gather at permanent water, streams, cypress ponds, and bayheads to breed. All Virginia breeding sites were found in graminoid dominated temporary ponds. Most of the breeding sites are in open-canopied pools. The forest surrounding the breeding ponds are the supposed nonbreeding habitat. Reproduction sites used in Virginia include pocosin wetlands, flooded weedy sites in agricultural areas, weedy flooded ponds under powerlines, and in coastal plain ephemeral ponds. Common locally in sandy areas near shallow ponds in pine savannas and in low wet woods and swamps. The major threat to this species is from continued logging of stands of native pine. Particularly detrimental is the conversion of these mature pine stands to high density monocultures of loblolly pine. The preferred habitat of this species includes closed canopy and moist, sandy, friable soils. Swamps, cypress ponds, pocosins, permanent ponds, vernal pools, or lakes may be used for breeding habitat.

The 60-acre Elbow Road Farm Field Project is composed of farmed field areas (42.8-acres), two small areas of mature forest (total of 4.5-acres), and three areas of early successional forest (12.7-acres).

The wetlands/water features on the property include forested nontidal wetlands (limited early spring inundation), farm ditches, and two stormwater ponds (constant water elevations with no herbaceous pond fringes).

None of the habitat listed above is present on the site. We therefore conclude that the site does not contain breeding habitat as listed above.

Eastern chicken turtle (*Deirochelys reticularia reticularia*)

State Endangered - In Virginia, the chicken turtle is found in freshwater cypress ponds among the forested dunes. In other parts of its range, it inhabits quiet waters such as ponds,

lakes, and ditches. They do not abandon aquatic habitats even though the ponds nearly dried during a drought year.

Eastern chicken turtles have not been observed on the project site. Based on the habitat found on site, this species is not anticipated to be found there.

Canebrake rattlesnake (*Crotalus horridus*)

State Endangered - Canebrakes occupy hardwood and mixed hardwood-pine forests, cane fields, and the ridges and glades of swampy areas. The preferred habitat is mature hardwood forests containing numerous logs and a layer of leaves and humus. They overwinter in the base of hollow trees or in stumps. Unique habitat associations include downed logs and bottomland hardwoods. They also occupy natural and anthropogenic open habitats adjacent to forests.

The majority of the habitat on the project consists of an ongoing farming operation. These areas are routinely planted, plowed, and harvested.

The attached information sheets that discuss and aid in the identification of canebrake rattlesnakes will be distributed to the contractors who will be working on-site. If a canebrake rattlesnake is encountered during construction, the contractors will not disturb the snake and call J.D. Kleopfer at VDGIF to come and move it.

Bald Eagle (*Haliaeetus leucocephalus*)

Roth Environmental also performed an eagle nest search for the project and vicinity using the Center for Conservation Biology's Virginia Bald Eagle Nest Locator. The nearest bald eagle nest is located 0.87-miles to the west of the southernmost project limit.

There are no restrictions/buffers on the property due to bald eagles or their nests.

Roseate Tern (*Sterna dougallii dougallii*)

State Endangered - The roseate tern was identified as an endangered species within the southeastern Virginia coastal area. These terns are listed in the literature as being strictly a coastal species. They are usually observed foraging in the nearshore surf. The optimal nesting habitat is described as open sandy beaches isolated from human activity. They have been known to use a variety of substrates, including pea gravel, open sand, overhanging rocks, and salt marshes for nesting. As none of these types of habitats are found within the project site, the proposed development will not have an affect on the roseate tern.

Macintosh HD:Users:Roth:Documents:Roth Environmental, LLC:Projects:2006:06-006.centerville:2016 Farm Field JPA:T&E:2016.10.12.Threatened and Endangered Species.Elbow.docx

endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: Elbow Road Farm Field Project

Official Species List

Provided by:

Virginia Ecological Services Field Office

6669 SHORT LANE

GLOUCESTER, VA 23061

(804) 693-6694

<http://www.fws.gov/northeast/virginiafield/>

Consultation Code: 05E2VA00-2017-SLI-0115

Event Code: 05E2VA00-2017-E-00125

Project Type: DEVELOPMENT

Project Name: Elbow Road Farm Field Project

Project Description: The proposed project will subdivide approximately 51 acres of land into 157 residential subdivision lots. Associated roads, stormwater management features, and green areas are also proposed as part of this project.

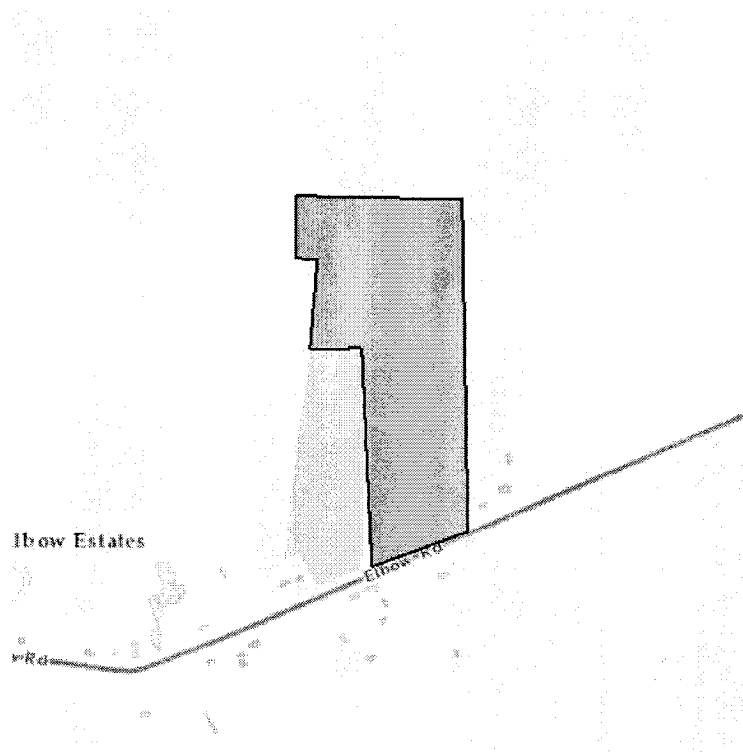
Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: Elbow Road Farm Field Project

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-76.16795539855957 36.74005341166981, -76.16823434829712 36.744678799961235, -76.16958618164062 36.74464441148579, -76.16939306259155 36.746552948569146, -76.16995096206665 36.746570142381195, -76.16995096206665 36.74791124785123, -76.16553068161011 36.747825280254936, -76.16540193557739 36.74080999982693, -76.16795539855957 36.74005341166981)))

Project Counties: Chesapeake, VA



United States Department of Interior
Fish and Wildlife Service

Project name: Elbow Road Farm Field Project

Endangered Species Act Species List

There are a total of 1 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Mammals	Status	Has Critical Habitat	Condition(s)
Northern long-eared Bat (<i>Myotis septentrionalis</i>) Population: Wherever found	Threatened		



United States Department of Interior
Fish and Wildlife Service

Project name: Elbow Road Farm Field Project

Critical habitats that lie within your project area

There are no critical habitats within your project area.



United States Department of Interior
Fish and Wildlife Service

Project name: Elbow Road Farm Field Project

Appendix A: FWS National Wildlife Refuges and Fish Hatcheries

There are no refuges or fish hatcheries within your project area.

Elbow Road Farm Field Project

IPaC Trust Resources Report

Generated October 12, 2016 01:40 PM MDT, IPaC v3.0.9

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.

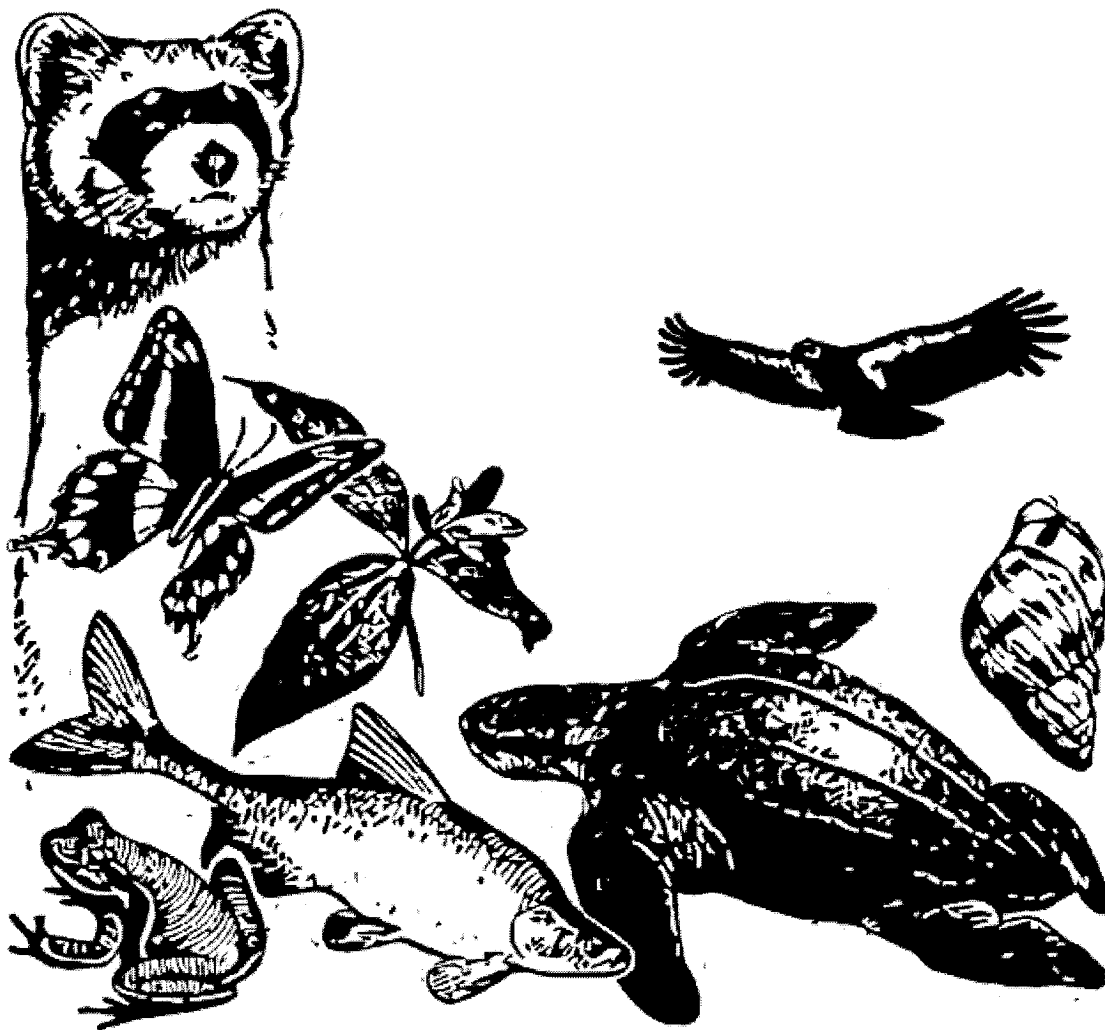


Table of Contents

IPaC Trust Resources Report	<u>1</u>
Project Description	<u>1</u>
Endangered Species	<u>2</u>
Migratory Birds	<u>3</u>
Refuges & Hatcheries	<u>6</u>
Wetlands	<u>7</u>

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Mammals

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=A0JE

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.^[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
<http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data
<http://www.birdscanada.org/birdmon/default/datasummaries.jsp>

The following species of migratory birds could potentially be affected by activities in this location:

American Kestrel <i>Falco sparverius paulus</i>	Bird of conservation concern
On Land Season: Year-round	
American Oystercatcher <i>Haematopus palliatus</i>	Bird of conservation concern
On Land Season: Year-round	
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0G8	
American Bittern <i>Botaurus lentiginosus</i>	Bird of conservation concern
On Land Season: Wintering	
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0F3	
Bald Eagle <i>Haliaeetus leucocephalus</i>	Bird of conservation concern
On Land Season: Year-round	
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B008	

Black Rail <i>Laterallus jamaicensis</i> On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B09A	Bird of conservation concern
Black Skimmer <i>Rynchops niger</i> On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EO	Bird of conservation concern
Black-throated Green Warbler <i>Dendroica virens</i> On Land Season: Breeding	Bird of conservation concern
Brown-headed Nuthatch <i>Sitta pusilla</i> On Land Season: Year-round	Bird of conservation concern
Fox Sparrow <i>Passerella iliaca</i> On Land Season: Wintering	Bird of conservation concern
Gull-billed Tern <i>Gelocheidon nilotica</i> On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JV	Bird of conservation concern
Hudsonian Godwit <i>Limosa haemastica</i> At Sea Season: Migrating	Bird of conservation concern
Least Bittern <i>Ixobrychus exilis</i> On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B092	
Lesser Yellowlegs <i>Tringa flavipes</i> On Land Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MD	Bird of conservation concern
Loggerhead Shrike <i>Lanius ludovicianus</i> On Land Season: Year-round http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FY	Bird of conservation concern
Marbled Godwit <i>Limosa fedoa</i> On Land Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JL	Bird of conservation concern
Nelson's Sparrow <i>Ammodramus nelsoni</i> On Land Season: Wintering	Bird of conservation concern
Peregrine Falcon <i>Falco peregrinus</i> On Land Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU	Bird of conservation concern
Pied-billed Grebe <i>Podilymbus podiceps</i> On Land Season: Year-round	Bird of conservation concern
Prairie Warbler <i>Dendroica discolor</i> On Land Season: Breeding	Bird of conservation concern
Prothonotary Warbler <i>Protonotaria citrea</i> On Land Season: Breeding	Bird of conservation concern

Purple Sandpiper <i>Calidris maritima</i> On Land Season: Wintering	Bird of conservation concern
Red Knot <i>Calidris canutus rufa</i> On Land Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0DM	Bird of conservation concern
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> On Land Season: Year-round	Bird of conservation concern
Rusty Blackbird <i>Euphagus carolinus</i> On Land Season: Wintering	Bird of conservation concern
Saltmarsh Sparrow <i>Ammodramus caudacutus</i> On Land Season: Year-round	Bird of conservation concern
Seaside Sparrow <i>Ammodramus maritimus</i> On Land Season: Year-round	Bird of conservation concern
Sedge Wren <i>Cistothorus platensis</i> On Land Season: Wintering	Bird of conservation concern
Short-billed Dowitcher <i>Limnodromus griseus</i> On Land Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0JK	Bird of conservation concern
Short-eared Owl <i>Asio flammeus</i> On Land Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HD	Bird of conservation concern
Snowy Egret <i>Egretta thula</i> On Land Season: Breeding	Bird of conservation concern
Swainson's Warbler <i>Limnothlypis swainsonii</i> On Land Season: Breeding	Bird of conservation concern
Whimbrel <i>Numenius phaeopus</i> On Land Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0JN	Bird of conservation concern
Wood Thrush <i>Hylocichla mustelina</i> On Land Season: Breeding	Bird of conservation concern
Worm Eating Warbler <i>Helminthophila vermivora</i> On Land Season: Breeding	Bird of conservation concern
Yellow Rail <i>Coturnicops noveboracensis</i> On Land Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0JG	Bird of conservation concern

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

This location overlaps all or part of the following wetlands:

Freshwater Emergent Wetland

PEM1Bd

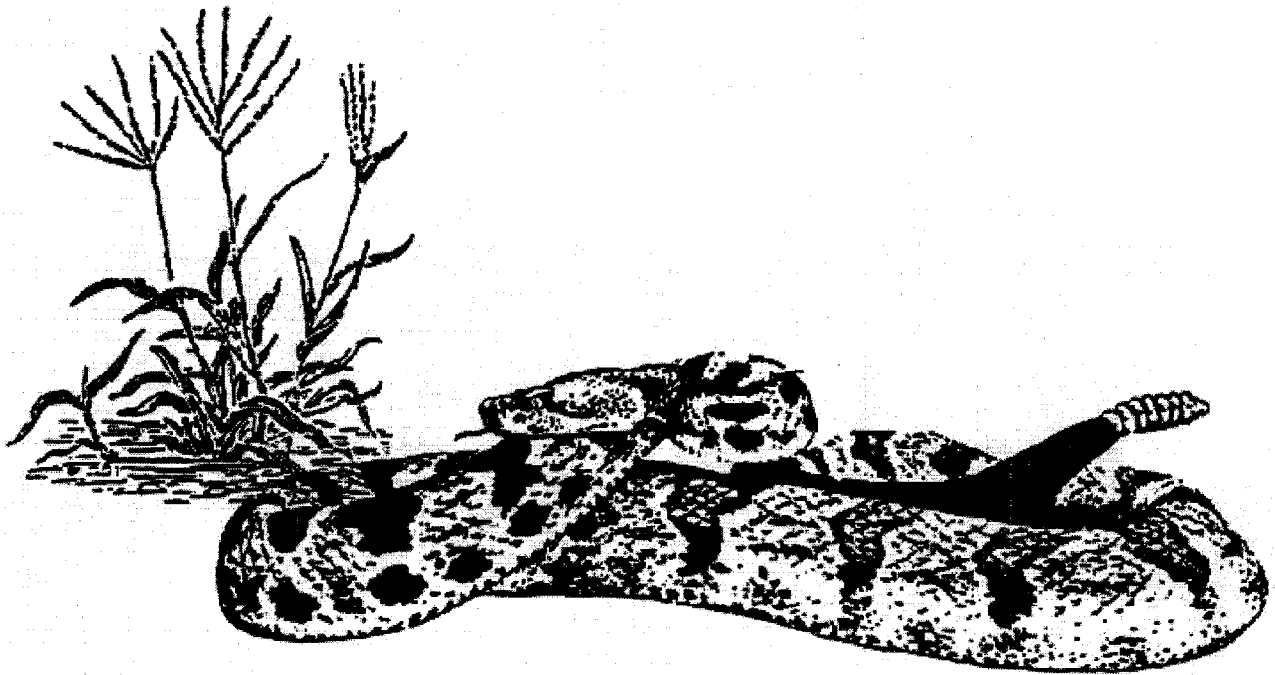
Freshwater Forested/shrub Wetland

PFO1Bd

A full description for each wetland code can be found at the National Wetlands Inventory website: <http://107.20.228.18/decoders/wetlands.aspx>

Virginia's Wildlife

Species Profile



Canebrake Rattlesnake

Crotalus horridus atricaudatus

Status: State Endangered

Virginia Department of Game and Inland Fisheries
Wildlife Diversity Division
Nongame and Endangered Wildlife Program
4010 West Broad Street
P.O. Box 11104
Richmond, VA 23230-1104
804-367-8999



Wildlife Diversity Biologists
(I) Williamsburg: 757-253-7072
(II) Forest: 804-525-7522
(III) Blacksburg: 540-951-7923
(IV) Verona: 540-248-9360
(V) Fredericksburg: 540-899-4169

www.dgif.state.va.us

Support Virginia's Nongame Wildlife Program!
Remember the Nongame Wildlife Tax Checkoff as you do your Virginia state income taxes this year.

Virginia's Wildlife Species Profile: Canebrake Rattlesnake

Virginia Distribution: Southeastern Coastal Plain

Characteristics

The canebrake rattlesnake is a large venomous snake reaching a maximum length in Virginia of about 5 1/2 feet. As the only rattlesnake found in southeastern Virginia, it is easily identified by its distinctive black tail and rattle. The body color is usually pinkish, gray, yellow, or light brown, with brown to black chevrons. A brown or chestnut mid-dorsal stripe is usually present, as is a yellowish-gold to brown stripe from the eye to the back of the jaw. Canebrakes have a wide head with a deep pit on each side between the eye and nostril, and elliptical pupils.

Feeding

Canebrakes feed primarily on gray squirrels, and typically feed only once or twice each year. They may also capture and eat other rodents, rabbits, and birds.

Habitat and Distribution

The canebrake is a physically distinct variant of the timber rattlesnake (*Crotalus horridus*) which ranges from New England to Minnesota and south to Florida and Texas. Whether the canebrake warrants status as a subspecies is in question, but populations occurring southward from southern Missouri, western Tennessee, and southeastern Virginia are considered to represent this population.

In Virginia, while timber rattlesnakes are widespread in the mountain regions and western Piedmont, canebrakes occur only as two populations in the southeastern corner of the state. On the Lower Peninsula they occur in Hampton, Newport News, and York County; and south of the James River they are still found in Isle of Wight County, and in the Cities of Suffolk, Chesapeake, and Virginia Beach.

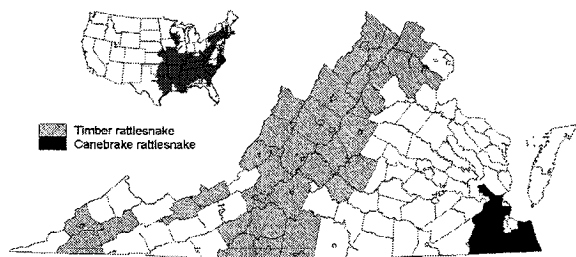


Figure 1. Canebrake and timber rattlesnake distribution in Virginia and the United States.

FACT: There are 30 species of snakes found in Virginia, but the canebrake rattlesnake is the only snake listed by the DGIF as endangered or threatened in the Commonwealth.

Mature hardwood forests are the preferred habitat of canebrake rattlesnakes, but the snakes also are found in mixed hardwood-pine forests, cane thickets, and in the ridges and glades of swamps. They prefer areas with numerous logs and a significant layer of leaves and humus. Canebrakes overwinter in the bases of hollow trees and stumps, and in the underground tunnels resulting from stump and root decomposition.

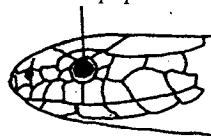
Reproduction

Canebrakes mature at about 4-6 years of age, and reproduce only every 2-3 years. Mating occurs in mid-summer through fall, and litters of 7-18 young are born the following August or September. The young are about 12 inches in length at birth, and resemble the adults.

Morphology: Snakes

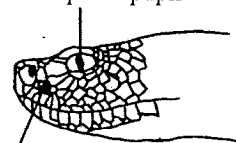
Non-venomous

Round pupil



Venomous

Elliptical pupil



Facial pit

Figure 2. Facial distinctions between venomous and non-venomous snakes of Virginia.

Threats, and How You Can Help

Habitat destruction or modification, and persecution by humans, are the primary threats to canebrake rattlesnakes. Despite their reputation, most canebrakes are reluctant to bite in the wild, preferring to lay undetected among the leaf litter. They rarely rattle even when approached, but if disturbed or startled they may strike in self-defense. Most rattlesnake bites occur when humans attempt to kill, capture, or handle a snake.

If you see a rattlesnake in the wild, do not disturb it. If you are concerned about its presence, please call the local office of the Virginia Department of Game and Inland Fisheries. If a rattlesnake bites you, do not attempt to administer first aid; rather, immediately seek treatment for snakebite at a medical facility.

For additional information, consult *A Guide to Endangered and Threatened Species in Virginia* by K. Terwilliger and J.R. Tate, or *The Reptiles of Virginia* by Joseph C. Mitchell.

Citation: Fernald, RT. 1999. Canebrake rattlesnake: *Crotalis horridus atricaudatus*. Virginia's wildlife species profile No. 030013.1 (Fernald RT, series editor). Richmond: Virginia Department of Game and Inland Fisheries.



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1.48 miles

1.02 miles

0.87 miles

PROJECT AREA

CLOSEST EAGLE'S NEST

BALD EAGLE



ROTH ENVIRONMENTAL, LLC

ELBOW ROAD FARM FIELD PROJECT HISTORIC RESOURCES REVIEW CHESAPEAKE, VIRGINIA RE PROJECT #06-006 OCTOBER 12, 2016

Roth Environmental performed a historic resource review through the Virginia Department of Historic Resources for the project area and the area immediately surrounding the site. The review verified the historic resource information provided by the Corps of Engineers in the wetland delineation confirmation.

This review revealed two architectural resources and two archaeological resources within the study area with two additional architectural resources off-site. These sites were identified and studied as part of the archaeological and architectural surveys for the proposed Southeastern Parkway and Greenbelt performed by Coastal Carolina Research, Inc. Reports for each of these surveys is on file at DHR.

Architectural Resources

The two architectural resources listed for the study area identified in the wetland delineation are an unmarked cemetery (131-5335) and a former house (131-0301). The unmarked cemetery is identified in the DHR maps as being located in the southwestern corner of the study area. This is on property that is owned by the City of Chesapeake and is not part of the proposed subdivision. This site contains a single, light colored stone marker. The report states that it is similar to a cemetery headstone but does not have any inscriptions. There were not burial depressions, footstones, or other funerary evidence. Given that there was no other evidence for the stone's existence, it was defined as a burial. DHR staff reviewed the report and agreed that the site is not eligible for the National Register of Historic Places (NRHP). This site is located outside the proposed development area and will not be impacted by the proposed development.

The second architectural resource is a former house. This house was demolished by the City of Chesapeake over ten years ago. As noted in the architectural survey, prior to its demolition, the house was seriously threatened due to vacancy and vandalism. The house was also located on the property owned by the City of Chesapeake and not part of the proposed development.

Two residential structures were identified south of Elbow Road that front the development. These structures are two residential houses that are listed as being build in the 1940s. The surveyor's assessment on file with DHR states, "These houses represent a design common for the period of construction and place. The structures lack any associations with significant events or persons in our history, and the architectural integrity of these houses has been diminished due to multiple alterations and additions

constructed by the current homeowners. These resources are recommended as not eligible for the NRHP under Criteria A, B, C, or D.”

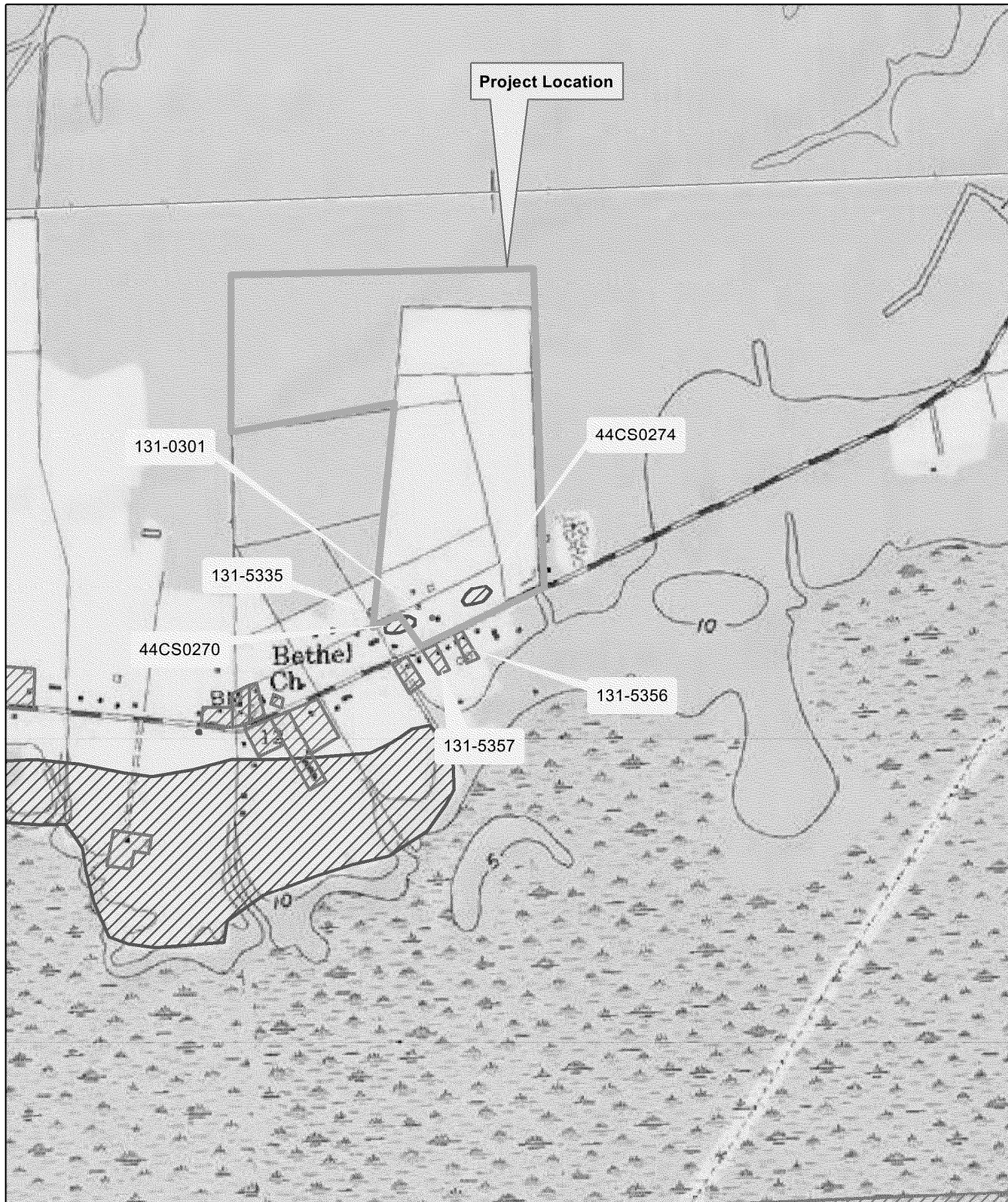
Archaeological Resources

Two archaeological sites were identified in the study area during the review. The first of these is a farmstead (44CS0270). This farmstead house burned approximately ten years ago. DHR lists the site as not eligible for listing on the NRHP. This house site is not located within the proposed area for development.

The second site was identified as a “trash scatter” area (44CS0274). Items identified in the artifact summary included “1porcellaneous ware, 1buff bodied stoneware, gray salt-glazed exterior, Albany slip interior, 2 clear bottle glass, with partial paper label, 1metal “eye ring”, and one chain link, 2 bricks, and 1 clinker.” These specimens were collected and are on file at VDHR.

The proposed development will not impact this area of trash scatter as it is situated within the proposed easement for the Southeastern Parkway/Expressway. The proposed subdivision is situated north of this corridor.

Macintosh HD:Users:Roth:Documents:Roth Environmental, LLC:Projects:2006:06-006.centerville:2016 Farm Field JPA:Historic Resources:2016.10.12.Historic Resources.Elbow.docx



Centerville Farm Field Property
Near 2014 Elbow Road
Chesapeake, VA 23320
September 20, 2016
L. Leake

Legend

- Architecture Resources
- Individual Historic District Properties
- Archaeological Resources
- DHR Easements

Sources: VDHR 2015, USGS 2002
Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years and the representation depicted is based on the field observation date and may not reflect current ground conditions. The map is for general illustration purposes and is not intended for engineering, legal or other site-specific uses. The map may contain errors and is provided "as-is". Contact DHR for the most recent information as data is updated continually.

1 inch = 1,056 feet





DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

August 26, 2016

APPROVED JURISDICTIONAL DETERMINATION

Eastern Virginia Regulatory Section
NAO-2016-0712 (Albemarle and Chesapeake Canal, North Landing River)

Tri-City Properties, LLC
ATTN: Michael Gelardi
3333-24 Virginia Beach Blvd
Virginia Beach, VA 23452

Dear Mr. Gelardi:

This letter is in regard to your request for verification of an approved jurisdictional determination for the waters of the U.S. (including wetlands) on a portion of a +428-acre property known as Centerville Properties. The subject property consists of a 110-acre area of three parcels located 0.9 miles east-northeast of the intersection of Elbow Road and Centerville Turnpike in Chesapeake, Virginia. The subject site includes tax map parcels 0390000000381, 0390000000382, and a limited portion of 0390000000380.

An on-site jurisdictional determination has found waters and wetlands regulated under Section 404 of the Clean Water Act (33 U.S.C. 1344) on the property listed above. Forested, non-tidal adjacent wetlands (approximately 30 acres) and tributaries (approximately 11,900 linear feet) have been identified on the site. This letter shall serve to confirm the wetlands delineation and jurisdictional waters, as shown on the map titled, "Wetland Delineation, Centerville Farm Field Site, Chesapeake, Virginia", revised August 5, 2016 by Roth Environmental, LLC (copy attached). Our basis for this determination is the application of the Corps' 1987 Wetland Delineation Manual (*and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*) and the positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation. The wetland is a water of the United States and is part of a tributary system to interstate waters (33 CFR 328.3(a)). These waters meet the Corps' definition of waters of the United States, are part of a tributary system to interstate waters (33 CFR 328.3 (a)) and have an ordinary high water mark.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into jurisdictional waters and/or wetlands on this site will require a Department of the Army permit and may require authorization by state and local authorities, including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ). This letter is a confirmation of the Corps jurisdiction for the waters and/or wetlands on the subject property and does not authorize any work in these jurisdictional areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

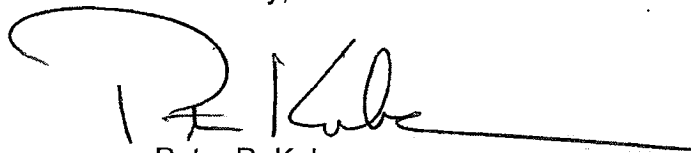
This letter contains an approved jurisdictional determination for your subject site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the North Atlantic Division Office at the following address:

ATTN: Mr. James Haggerty, Regulatory Program Manager
United States Army Corps of Engineers
CENAD-PD-OR
Fort Hamilton Military Community
301 General Lee Avenue
Brooklyn, NY 11252-6700
Email: james.w.haggerty@usace.army.mil

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 C.F.R. part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by October 25, 2016. It is not necessary to submit an RFA form to the Division office if you do not object to the determination in this letter.

This jurisdictional determination is valid for a period of five (5) years from the date of this letter unless new information warrants revision prior to the expiration date. If you have any questions, please contact Audrey Cotnoir either via telephone at 757-549-8819 or via email at audrey.l.cotnoir@usace.army.mil.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. R. Kube', with a long horizontal line extending to the right.

Peter R. Kube
Chief, Eastern Virginia Regulatory Section

Enclosures:

Wetland/Waters Delineation Map; Administrative Appeal Form; Supplemental Preapplication Form

Cc:

Roth Environmental, LLC, ATTN: Matt Roth
Virginia Department of Environmental Quality, Virginia Beach, ATTN: Sheri Kattan

**NONTIDAL FORESTED
WETLANDS (GREEN)**

**STORMWATER
MANAGEMENT BASIN**

**DITCHES THAT ARE
WATERS OF THE U.S.
(BLUE)**

STUDY LIMIT

**STORMWATER
MANAGEMENT BASIN**

**DS = DATA COLLECTION STATIONS
A1 = NUMBERED FLAGGING DELINEATING
WETLANDS**

**WETLAND DELINEATION WAS PERFORMED USING THE METHODOLOGY
OUTLINED IN THE REGIONAL SUPPLEMENT TO THE CORPS OF
ENGINEERS WETLAND DELINEATION MANUAL: ATLANTIC AND GULF
COASTAL PLAIN REGION (TR-10-20).**

WETLAND DELINEATION

**CENTERVILLE FARM FIELD SITE
CHESAPEAKE, VIRGINIA
AERIAL PHOTO BASE MAP**

REVISED AUGUST 5, 2016

SCALE 1"= ±450'

**ROTH ENVIRONMENTAL, LLC
700 PRESCOTT CIRCLE
NEWPORT NEWS, VIRGINIA 23602
PHONE (757) 814-1048 • FAX (757) 249-2257**

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Tri-City Properties, LLC		File Number: NAO-2016-0712	Date: 8/26/2016
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A	
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B	
	PERMIT DENIAL	C	
X	APPROVED JURISDICTIONAL DETERMINATION	D	
	PRELIMINARY JURISDICTIONAL DETERMINATION	E	

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/appeals.aspx> or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

U.S. Army Corps of Engineers, Norfolk District
ATTN: Audrey Cotnoir (CENAO-WR-R)
Great Bridge Reservation
2509 Reservation Road
Chesapeake, Virginia 23322-5217
(757) 549-8819
Email: Audrey.l.cotnoir@usace.army.mil

If you only have questions regarding the appeal process you may also contact:

Mr. James W. Haggerty
Regulatory Program Manager (CENAD-PD-OR)
U.S. Army Corps of Engineers
Fort Hamilton Military Community
301 General Lee Avenue
Brooklyn, New York 11252-6700
Telephone number: 347-370-4650

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date:

Telephone number:



Reply to
Attention of

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1096

AUGUST 26, 2016

Supplemental Preapplication Information

Project Number: NAO-2016-0712

Applicant: Tri-City Properties, LLC

Project Location: 110-acre area of three parcels located 0.9 miles east-northeast of the intersection of Elbow Road and Centerville Turnpike in Chesapeake, Virginia. The subject site includes tax map parcels 0390000000381, 0390000000382, and a limited portion of 0390000000380.

1. A search of the Virginia Department of Historic Resources data revealed the following:

- ☐ No known historic properties are located on the property.
- ☒ The following known architectural resources are located on the property:
131-5335 (Unmarked Cemetery)- VDHR determined Not Eligible in 2005
131-0301 (Former house at 2004 Elbow Road)- Demolished
- ☒ The following known archaeological resources are located on the property:
44CS0270 (Farmstead)- VDHR determined Not Eligible in 2005
44CS0274 (Trash scatter, 1875-1899; 1900-1924)- VDHR has not evaluated for National Register eligibility)
- ☐ The following known historic resources are located in the vicinity of the property (potential for effects to these resources from future development):

NOTE:

- 1) *The information above is for planning purposes only. In most cases, the property has not been surveyed for historic resources. Undiscovered historic resources may be located on the subject property or adjacent properties and this supplemental information is not intended to satisfy the Corps' requirements under Section 106 of the National Historic Preservation Act (NHPA).*
- 2) *Prospective permittees should be aware that Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.*

2. A search of the data supplied by the U.S. Fish & Wildlife Service, the Virginia Department of Conservation and Recreation and the Virginia Department of Game and Inland Fisheries revealed the following:

- ☐ No known populations of threatened or endangered species are located on or within the vicinity of the subject property.
- ☒ The following federally-listed species may occur within the vicinity of the subject property:
Northern Long-eared Bat (*Myotis septentrionalis*)

- ☐ The following state-listed (or other) species may occur within the vicinity of the subject property:

Please note this information is being provided to you based on the preliminary data you submitted to the Corps relative to project boundaries and project plans. Consequently, these findings and recommendations are subject to change if the project scope changes or new information becomes available and the accuracy of the data.



ROTH ENVIRONMENTAL, LLC

June 16, 2016

Audrey Cotnoir
U.S. Army Corps of Engineers
Regulatory Branch
803 Front Street
Norfolk, VA 23510

RE: Centerville – Farm Fields
Revised Letter
Project No. 06-006
USACE Project No. NAO-2006-5097

Dear Ms. Cotnoir:

On behalf of our client, Tri-City Properties, LLC (Attn.: Michael Gelardi, 3333 Virginia Beach Boulevard, Suite 24, Virginia Beach, Virginia 23452) Roth Environmental, LLC is requesting confirmation of the wetland delineation within the study area identified on the referenced project. The farm field site is specifically located 0.9-miles east-northeast of the intersection of Elbow Road and Centerville Turnpike. The study area is approximately 110-acres.

The Centerville Farm Field Site is a mixture of actively farmed fields and woodlands. The farmed areas account for approximately 45-acres. The remaining property contains a 2-acre maintained yard (the location of the former farm house) and 63-acres of woodlands.

In general, the farmed fields on the property are ditched with primary ditches (deepest), feeder ditches (shallower ditches that flow into the primary ditches), and lateral swales in the fields (these feed into the feeder ditches). The forested areas within the study area were all historically logged. The areas immediately north and northwest of the farm fields were timbered in the early 1990s. These areas have younger forests than the surrounding wooded areas. They are also typified by having numerous mounded areas throughout them. These mounded portions of the site are depicted in red on the LIDAR map.

Prior to field investigations, research on the site was performed using aerial photographs, USGS Topographic Maps, GIS mapping, the NRCS Soils survey, and the previously confirmed wetland delineation. The NRCS maps two soil types on the property. The southern half of the property is mapped as Acredale soils. These soils are listed as poorly drained by the NRCS when no ditching or other modifications have been made.

The northern half of the study area is mapped as Gertie soils. Gertie soils are also listed as poorly drained when no ditching has been performed.

At the highest elevations, the “non filled” portions of the property are approximately 12-14 feet above mean sea level. This is found on the northern portion of the study area. As the property falls to the north and south, it drops in elevation to approximately 10 feet above mean sea level. Drainage off the property is through a series of shallow and deep ditches that flow to the north and south.

The site also contains several areas that contain fill/soil piles that were historically shaped to provide drainage and allowed to revegetate. Young saplings have vegetated these areas. Examples of these areas are in the southeastern and northwestern edges of the field areas. Elevations in these areas are ten to fifteen feet above the surrounding grades.

Roth Environmental, LLC has performed a wetland delineation on the study area. Fieldwork for the wetland delineation was performed using the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (TR-10-20). This manual uses three parameters (vegetation, soils, and hydrology) in determining and delineating wetlands. Wetlands are denoted in the field with numbered orange and white flagging.

During the wetland delineation field efforts, we incorporated the flagging that we hung during our April 2016 meeting/site visit. These flags provided a good baseline for the areas that we had agreed represented the wetland/upland limit. The newly flagging wetland limit tied right into these flags.

The most significant ditching on the site is in the southern two-thirds of the study area. This includes the deeper ditches associated with the farmed fields. The forested upland areas are predominantly associated with the deeper ditches along the northern edges of the farmed areas. These areas tend to have sandier soils than the neighboring wetland areas and have a much greater ability to shed stormwater through the ditches.

Additionally, we incorporated some of the mounded areas into the uplands. The areas that we included as uplands were found along the upland/wetland limit that we had walked in April 2016. Other mounded areas found farther to the interior (or north) of the shown wetland limit, were not flagged, as they were somewhat far from the contiguous upland areas. Should the applicant wish to explore these areas in greater detail, we can address them in an expanded delineation of these areas at a later date.

The nontidal forested wetland areas meet all three parameters for wetlands as outlined in the Regional Supplement. They contain a vegetative element that tends to include dominant species that are facultative and wetter. The soils throughout the study area are hydric. Typical indicators of hydrology that were observed included water stained leaves, the FAC-Neutral Test, and geomorphic position.

As discussed above, the forested uplands are found in the areas most deeply ditched and contiguous to the farmed fields. These areas have a shift to include facultative upland species as constituents in their dominant vegetation components. While the soils in these upland areas are hydric, there are significant hydrologic modifications throughout them in the form of the ditches. Therefore, we did not observe indicators of hydrology in these areas.

The farmed fields were reviewed in the field and also through aerial photographs to view historic conditions. Roth Environmental compared aerials from GoogleEarth to the rainfall data that you provided. A summary is provided below.

Aerial Photograph Review Accounting for Rainfall Conditions – Centerville Farm Fields

Photograph Date	Conditions Observed in the Fields on the Aerial Photograph	Antecedent Conditions and Rainfall the Month of the Photograph
11/2015	Fields show no signatures of saturation or inundation.	Rainfall above average for September and November in 2015. 3-month antecedent conditions at high end of normal as October was on the lowest end of normal.
4/2014	Some scattered light signatures of saturation on the aerial photograph. No inundation observed.	April precipitation above average. The 3-month antecedent conditions were normal.
1/2011	Scattered light signatures of saturation in the fields. No inundation observed.	The 3-month antecedent is on the low end of normal. January is within the normal range.
4/2010	Few scattered light signatures of saturation in the fields. No inundation observed.	The 3-month antecedent is above normal. April was below normal.

In comparing the aerial photographs with the rainfall data, several observations were made. First, there was no inundation in the fields observed in any of the photographs. Second, only light signatures of saturation were observed. The majority of these signatures appear to be in the areas of the swales in the fields. These areas are likely collecting the rainfall and allowing the water to funnel to the ditches.

The rainfall data predominantly shows, with the exception of 2011, there is either above normal precipitation in the 3 months prior to the aerial photograph or there is above normal precipitation the month of the photograph. This could likely be the reason that the fields show the light signatures of saturation in these photographs.

Based on our review, the farm fields have been effectively drained and are not wetland areas.

I have added an attachment that discusses the Ditch Assessment for Waters of the U.S. This table and map depict the data that we gathered in April.

Based on our field calculations, the study area contains approximately 80 acres of uplands and 30 acres of nontidal forested wetlands. The study area also contains approximately 11,900 linear feet of Waters of the U.S. (ditches).

Included with this report are a wetland delineation drawing, a Waters of the U.S. Assessment Map, a vicinity map, data collection forms, the NRCS soils map, and the NWI map. At this time, we are requesting confirmation of the wetland delineation.

I look forward to our site visit to confirm this delineation. Please let me know if you have any questions or would like to discuss the information prior to this date.

Sincerely,
ROTH ENVIRONMENTAL, LLC



Matthew Roth, P.W.S.
President

Enclosures

cc: Mike Gelardi

Macintosh HD:Users:Roth:Documents:Roth Environmental, LLC:Projects:2006-06-006.centerville:2016 Farm Field Area -
Delineation:Submission Package:2016.07.07.Cotnoir.wetland delineation.Centerville Farm Fields.docx

**NONTIDAL FORESTED
WETLANDS (GREEN)**

**STORMWATER
MANAGEMENT BASIN**

**DITCHES THAT ARE
WATERS OF THE U.S.
(BLUE)**

STUDY LIMIT

**STORMWATER
MANAGEMENT BASIN**

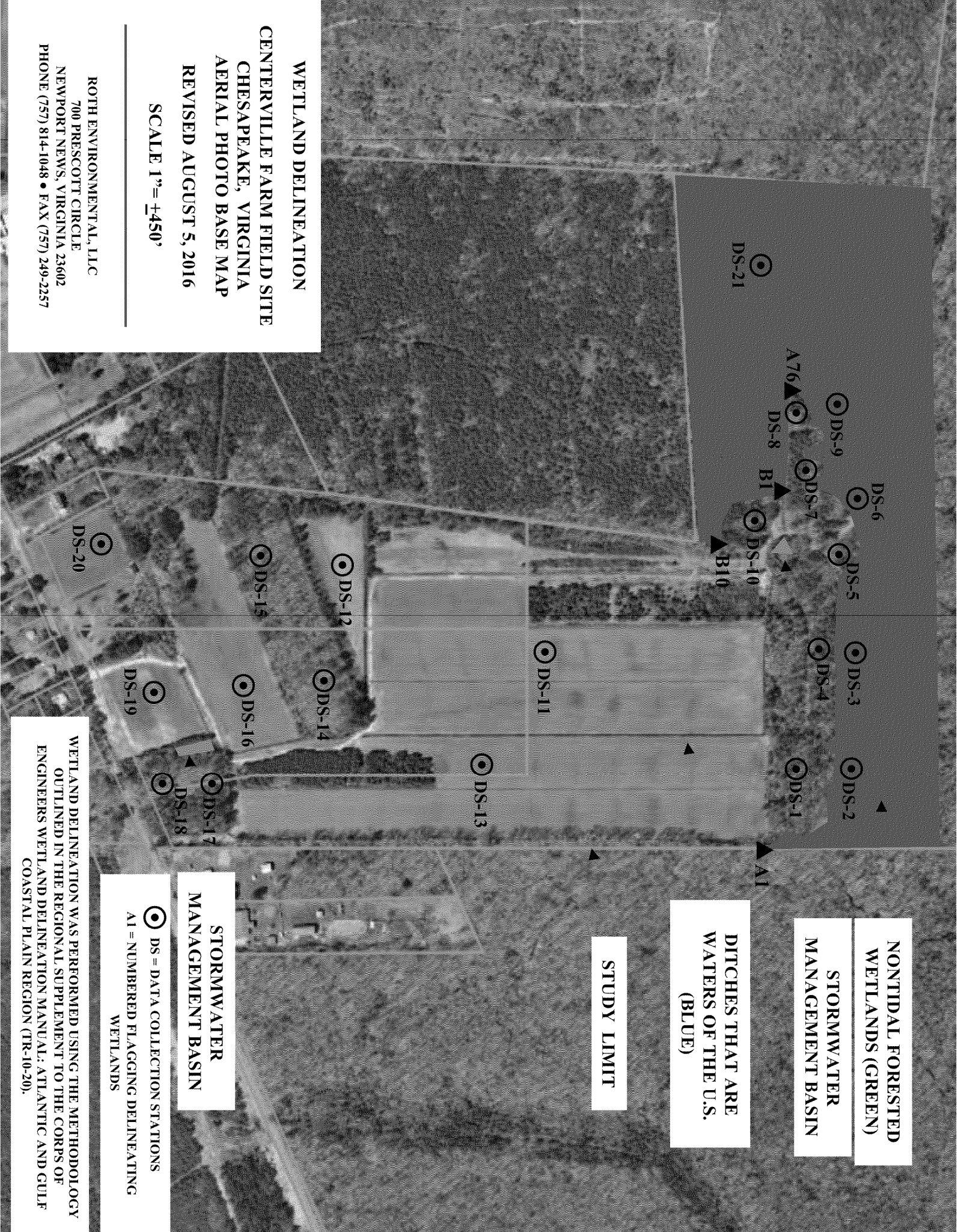
**DS = DATA COLLECTION STATIONS
A1 = NUMBERED FLAGGING DELINEATING
WETLANDS**

**WETLAND DELINEATION WAS PERFORMED USING THE METHODOLOGY
OUTLINED IN THE REGIONAL SUPPLEMENT TO THE CORPS OF
ENGINEERS WETLAND DELINEATION MANUAL: ATLANTIC AND GULF
COASTAL PLAIN REGION (TR-10-20).**

**WETLAND DELINEATION
CENTERVILLE FARM FIELD SITE
CHESAPEAKE, VIRGINIA
AERIAL PHOTO BASE MAP
REVISED AUGUST 5, 2016**

SCALE 1"= ±450'

**ROTH ENVIRONMENTAL, LLC
700 PRESCOTT CIRCLE
NEWPORT NEWS, VIRGINIA 23602
PHONE (757) 814-1048 • FAX (757) 249-2257**





ROTH ENVIRONMENTAL, LLC

**Centerville – Farm Field Site
Ditch Assessment/Waters of the U.S.
July 2016**

The following table summarizes the assessment of the ditches on the Centerville – Farm Field Site. Waters of the U.S. were identified using an Ordinary High Water Mark (OHWM). Roth Environmental worked with the U.S. Army Corps of Engineers in the collection of the data presented below. Field data was collected 4/21/16. The physical characteristics of OHWMs are listed below the table and correspond to the numbers given.

Ditch Assessment Station	OHWM Physical Characteristics	Water Present in Ditch
1	4, 5, 7, 13, 14	Yes
2	4, 5, 7, 13, 14	Yes
3	4, 5, 7, 13, 14	Yes
4	4, 5, 7, 13, 14	Yes
5	4, 5, 7, 13, 14	Yes
6	4, 5, 7, 13, 14	Yes
7	4, 5, 7, 13, 14	Yes
8	Not a Waters of the U.S.	No
9	4, 7, 13, 15	Yes
10	4, 5, 7, 13, 14	Yes
11	4, 5, 7, 13, 14	Yes

The following physical characteristics should be considered when making an OHWM determination, to the extent that they can be identified and are deemed reasonably reliable:

1. Natural line impressed on the bank
2. Shelving
3. Changes in the character of soil
4. Destruction of terrestrial vegetation
5. Presence of litter and debris
6. Wracking
7. Vegetation matted down, bent, or absent
8. Sediment sorting
9. Leaf litter disturbed or washed away
10. Scour
11. Deposition
12. Multiple observed flow events
13. Bed and banks
14. Water staining
15. Change in plant community

**NONTIDAL FORESTED
WETLANDS (GREEN)**

STUDY LIMIT

**WATERS OF THE U.S.
DATA COLLECTION POINTS**
CENTERVILLE FARM FIELD SITE
CHESAPEAKE, VIRGINIA
LIDAR BASE MAP
REVISED JULY 6, 2016
SCALE 1"= ±500'

ROTH ENVIRONMENTAL, LLC
700 PRESCOTT CIRCLE
NEWPORT NEWS, VIRGINIA 23602
PHONE (757) 814-1048 • FAX (757) 249-2257

**WETLAND DELINEATION WAS PERFORMED USING THE METHODOLOGY
OUTLINED IN THE REGIONAL SUPPLEMENT TO THE CORPS OF
ENGINEERS WETLAND DELINEATION MANUAL: ATLANTIC AND GULF
COASTAL PLAIN REGION (TR-10-20).**

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville - Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: D.S.11
 Investigator(s): Both Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Farm Field Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 36°44'42" Long: 76°10'00" Datum: _____
 Soil Map Unit Name: Acredale NWI classification: UPL
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____		
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>		
Remarks: <u>Many lateral ditches and field swales drain this field.</u>			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DS11

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____	(A) _____ (B) _____
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = _____																	
FACW species _____	x 2 = _____																	
FAC species _____	x 3 = _____																	
FACU species _____	x 4 = _____																	
UPL species _____	x 5 = _____																	
Column Totals: _____	(A) _____ (B) _____																	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
Sapling Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
Shrub Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
Herb Stratum (Plot size: <u>30'</u>)																		
1. <u>Allium canadense</u>	<u>2</u>	<u>Y</u>	<u>FACU</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
<u>2</u> = Total Cover 50% of total cover: <u>1</u> 20% of total cover: <u>.4</u>																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
Remarks: (If observed, list morphological adaptations below).																		

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ Problematic Hydrophytic Vegetation¹ (Explain)

Definitions of Five Vegetation Strata:
Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes _____ No ☒

SOIL

Sampling Point: DS1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
<u>0-12</u>	<u>10YR 3/1</u>	<u>100</u>					<u>Sandy loam</u>	
<u>12-24</u>	<u>10YR 5/1</u>	<u>95</u>	<u>10YR 5/4</u>	<u>5</u>			<u>sandy clay loam</u>	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville-Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS12
 Investigator(s): Both Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Farm Field Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LART Lat: 36°44'42" Long: 76°10'00" Datum: _____
 Soil Map Unit Name: Acredale NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:

This field is surrounded by deep ditches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DSL2

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____	(A) _____ (B) _____
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = _____																	
FACW species _____	x 2 = _____																	
FAC species _____	x 3 = _____																	
FACU species _____	x 4 = _____																	
UPL species _____	x 5 = _____																	
Column Totals: _____	(A) _____ (B) _____																	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
Sapling Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
Shrub Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.														
Herb Stratum (Plot size: <u>30'</u>)																		
1. <u>Triticum aestivum</u>	<u>30</u>	<u>Y</u>	<u>UPL</u>															
2. <u>Ranunculus bulbosus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Albium canadense</u>	<u>10</u>	<u>N</u>	<u>FACU</u>															
4. <u>Solanum carolinense</u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
5. <u>Vicia sativa</u>	<u>5</u>	<u>N</u>	<u>FACU</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
<u>80</u> = Total Cover 50% of total cover: <u>40</u> 20% of total cover: <u>16</u>				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>														
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
Remarks: (If observed, list morphological adaptations below).																		

SOIL

Sampling Point: DS12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 4/2	100					clay loam	
5-16	10YR 4/1	95	10YR 5/6	5			clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville-Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS13
 Investigator(s): Roth Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Farm Field Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 36°44'42" Long: 76°10'00" Datum: _____
 Soil Map Unit Name: Acredale NWI classification: LPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____		
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>		

Remarks:

This field is contains many lateral ditches and field swales that drain it.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> FAC-Neutral Test (D5)
		<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DS13

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____	(A) _____ (B) _____
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = _____																	
FACW species _____	x 2 = _____																	
FAC species _____	x 3 = _____																	
FACU species _____	x 4 = _____																	
UPL species _____	x 5 = _____																	
Column Totals: _____	(A) _____ (B) _____																	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
Sapling Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
Shrub Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
Herb Stratum (Plot size: <u>30'</u>)																		
1. <u>Ambrasia artemisiifolia</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>															
2. <u>Digitaria bicornis</u>	<u>10</u>	<u>Y</u>	<u>UPL</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
<u>40</u> = Total Cover 50% of total cover: <u>20</u> 20% of total cover: <u>8</u>																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
Remarks: (If observed, list morphological adaptations below).																		

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes _____ No ✓

SOIL

Sampling Point: DS13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 4/2	100					clay loam	
5-11.6	10YR 4/1	95	10YR 5/1.6	5			clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville - Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS14
 Investigator(s): Roth Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Wooded Flat Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 36° 44' 42" Long: 76° 10' 00" Datum: _____
 Soil Map Unit Name: Acredale NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: <u>This wooded area is surrounded by deep ditches.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Wooded area surrounded by 5' ditches</u>		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DS14

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Liquidambar styraciflua</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>10</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80</u> (A/B)
2. <u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Pinus taeda</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
4. <u>Prunus serotina</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
5. <u>Liriodendron tulipifera</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
6. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
50% of total cover: <u>95</u> = Total Cover 20% of total cover: <u>19</u>				
Sapling Stratum (Plot size: 30')				
1. <u>Acer rubrum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3. _____				
4. _____				
5. _____				
6. _____				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0' ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: <u>10</u> = Total Cover 20% of total cover: <u>2</u>				
Shrub Stratum (Plot size: 30')				
1. <u>Pinus taeda</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
2. <u>Vaccinium corymbosum</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
3. <u>Asimina triloba</u>				
4. <u>Quercus phellos</u>				
5. <u>Prunus serotina</u>				
6. _____				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
50% of total cover: <u>14</u> = Total Cover 20% of total cover: <u>2.8</u>				
Herb Stratum (Plot size: 30')				
1. <u>Toxicodendron radicans</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Vitis rotundifolia</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Parthenocissus quinquefolia</u>				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
50% of total cover: <u>25</u> = Total Cover 20% of total cover: <u>5</u>				
Woody Vine Stratum (Plot size: 30')				
1. <u>Parthenocissus quinquefolia</u>	<u>2</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Toxicodendron radicans</u>	<u>4</u>	<u>Y</u>	<u>FAC</u>	
3. _____				
4. _____				
5. _____				
50% of total cover: <u>6</u> = Total Cover 20% of total cover: <u>1.2</u>				
Remarks: (If observed, list morphological adaptations below).				

Sampling Point: DS14

Atlantic and Gulf Coastal Plain Region – Version 2.0

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville-Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS15
 Investigator(s): Bath Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Wooded Flat Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 36° 44' 42" Long: 76° 10' 00" Datum: _____
 Soil Map Unit Name: Acredeale NWI classification: LPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: <u>This wooded area is surrounded by deep ditches.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Wooded Flat surrounded by 5' deep ditches.</u>		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: D815

Tree Stratum (Plot size: 30')				Dominance Test worksheet:	
	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Liquidambar styraciflua</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>10</u>	(A)
2. <u>Pinus torida</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>12</u>	(B)
3. <u>Acer rubrum</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83</u>	(AB)
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
<u>90</u> = Total Cover 50% of total cover: <u>45</u> 20% of total cover: <u>18</u>					
Sapling Stratum (Plot size: 30')				Prevalence Index worksheet:	
	Absolute % Cover	Dominant Species?	Indicator Status	Total % Cover of:	Multiply by:
1. <u>Acer rubrum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	OBL species _____	x 1 = _____
2. <u>Quercus nigra</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	FACW species _____	x 2 = _____
3. _____	_____	_____	_____	FAC species _____	x 3 = _____
4. _____	_____	_____	_____	FACU species _____	x 4 = _____
5. _____	_____	_____	_____	UPL species _____	x 5 = _____
6. _____	_____	_____	_____	Column Totals: _____	(A) _____ (B) _____
<u>10</u> = Total Cover 50% of total cover: <u>5</u> 20% of total cover: <u>2</u>				Prevalence Index = B/A = _____	
Shrub Stratum (Plot size: 30')				Hydrophytic Vegetation Indicators:	
	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Vaccinium corymbosum</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	___ 1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Quercus nigra</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	___ 2 - Dominance Test is >50%	
3. <u>Asimina triloba</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	___ 3 - Prevalence Index is ≤3.0 ¹	
4. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation ¹ (Explain)	
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
<u>17</u> = Total Cover 50% of total cover: <u>8.5</u> 20% of total cover: <u>3.4</u>				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Herb Stratum (Plot size: 30')				Definitions of Five Vegetation Strata:	
	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Toxicodendron radicans</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
2. <u>Lonicera japonica</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
3. <u>Parthenocissus quinquefolia</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
4. _____	_____	_____	_____	Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
5. _____	_____	_____	_____	Woody vine – All woody vines, regardless of height.	
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
<u>70</u> = Total Cover 50% of total cover: <u>35</u> 20% of total cover: <u>14</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	
Woody Vine Stratum (Plot size: 30')					
	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Toxicodendron radicans</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>		
2. <u>Vitis rotundifolia</u>	<u>3</u>	<u>Y</u>	<u>FAC</u>		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
<u>8</u> = Total Cover 50% of total cover: <u>4</u> 20% of total cover: <u>1.6</u>					
Remarks: (If observed, list morphological adaptations below).					

SOIL

Sampling Point: DS15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	10YR 3/1	100					sandy loam	
1-6	10YR 4/1	95	10YR 5/6	5			clay loam	
6-18	10YR 5/1	95	10YR 5/4	5			clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS16
 Investigator(s): Both Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Farm Field Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 36° 44' 42" Long: 76° 10' 00" Datum: _____
 Soil Map Unit Name: Acredale NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:

This field is surrounded by deep ditches and has swales through it.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> FAC-Neutral Test (D5)
		<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DS10

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ <u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Shrub Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ <u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
Herb Stratum (Plot size: <u>30'</u>) 1. <u>Urochloa platyphylla</u> <u>20</u> <u>Y</u> <u>FAC</u> 2. <u>Allium canadense</u> <u>5</u> <u>N</u> <u>FACU</u> 3. <u>Vicia sativa</u> <u>3</u> <u>N</u> <u>FACU</u> 4. <u>Solanum ptycanthum</u> <u>1</u> <u>N</u> <u>FACU</u> 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ <u>29</u> = Total Cover 50% of total cover: <u>14.5</u> 20% of total cover: <u>5.8</u>				
Woody Vine Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ <u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: (If observed, list morphological adaptations below).				

SOIL

Sampling Point: DS12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-5	10YR 4/2	95	10YR 5/4	5			sandy loam	
5-20	10YR 4/1	95	10YR 5/4	5			clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A, B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville - Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS 17
 Investigator(s): Roth Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Wooded Flat Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 36°44'42" Long: 76°10'00" Datum: _____
 Soil Map Unit Name: Tomatley-Nimmo NWI classification: UPL
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B18) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <p style="font-size: 1.2em;">Area surrounded by ditches 4' deep</p>		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DS17

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Acer rubrum</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>12</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. <u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Quercus michauxii</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
50% of total cover: <u>80</u> = Total Cover 20% of total cover: <u>16</u>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling Stratum (Plot size: 30') 50% of total cover: <u>23</u> = Total Cover 20% of total cover: <u>4.6</u>				
1. <u>Prunus serotina</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Quercus rubra</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Quercus nigra</u>	<u>3</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
Shrub Stratum (Plot size: 30') 50% of total cover: <u>11.5</u> = Total Cover 20% of total cover: <u>2.3</u>				
1. <u>Quercus rubra</u>	<u>3</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Vaccinium corymbosum</u>	<u>2</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Prunus serotina</u>	<u>2</u>	<u>Y</u>	<u>FACU</u>	
4. <u>Quercus phellos</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Herb Stratum (Plot size: 30') 50% of total cover: <u>4</u> = Total Cover 20% of total cover: <u>0.8</u>				
1. <u>Toxicodendron radicans</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
2. <u>Parthenocissus quinquefolia</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Arundinaria gigantea</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. <u>Lonicera japonica</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: 30') 50% of total cover: <u>30</u> = Total Cover 20% of total cover: <u>6</u>				
1. <u>Toxicodendron radicans</u>	<u>3</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. <u>Smilax rotundifolia</u>	<u>3</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Lonicera japonica</u>	<u>3</u>	<u>Y</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
50% of total cover: <u>9</u> = Total Cover 20% of total cover: <u>1.8</u>				
Remarks: (If observed, list morphological adaptations below). <div style="height: 40px; border: 1px solid black;"></div>				

SOIL

Sampling Point: DS17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/1	100					sandy loam	
3-10	10YR 4/1	95	10YR 5/4	5			clay loam	
10-20	10YR 5/1	95	10YR 5/4	5			clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville - Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS18
 Investigator(s): Roth Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Forested Flat Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LART Lat: 36° 44' 42" Long: 76° 10' 00" Datum: _____
 Soil Map Unit Name: Acredale NWI classification: UPL
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	

Remarks:

Deep ditches adjacent to area.

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	

(includes capillary fringe)
 Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DS18

Tree Stratum (Plot size: 30')				Dominance Test worksheet:	
	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Pinus taeda</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u>	(A)
2. <u>Liquidambar styraciflua</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>9</u>	(B)
3. <u>Acer rubrum</u>	<u>25</u>	<u>N</u>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>44</u>	(AB)
4. <u>Sassafras albidum</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>		
5. <u>Prunus serotina</u>	<u>20</u>	<u>N</u>	<u>FACU</u>		
6. _____					
<u>145</u> = Total Cover 50% of total cover: <u>72.5</u> 20% of total cover: <u>29</u>				Prevalence Index worksheet:	
Sapling Stratum (Plot size: 30')				Total % Cover of: _____ Multiply by: _____	
1. <u>Acer rubrum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	OBL species _____ x 1 = _____	
2. _____				FACW species _____ x 2 = _____	
3. _____				FAC species _____ x 3 = _____	
4. _____				FACU species _____ x 4 = _____	
5. _____				UPL species _____ x 5 = _____	
6. _____				Column Totals: _____ (A) _____ (B)	
<u>5</u> = Total Cover 50% of total cover: <u>2.5</u> 20% of total cover: <u>1</u>				Prevalence Index = B/A = _____	
Shrub Stratum (Plot size: 30')				Hydrophytic Vegetation Indicators:	
1. <u>Quercus rubra</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
2. <u>Vaccinium corymbosum</u>	<u>5</u>	<u>N</u>	<u>FACW</u>		
3. <u>Asimina triloba</u>	<u>5</u>	<u>N</u>	<u>FAC</u>		
4. <u>Sassafras albidum</u>	<u>2</u>	<u>N</u>	<u>FACU</u>		
5. <u>Quercus phellos</u>	<u>2</u>	<u>N</u>	<u>FAC</u>		
6. <u>Quercus michauxii</u>	<u>1</u>	<u>N</u>	<u>FACU</u>		
7. <u>Prunus serotina</u>	<u>1</u>	<u>N</u>	<u>FACU</u>		
<u>26</u> = Total Cover 50% of total cover: <u>13</u> 20% of total cover: <u>5.2</u>				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Herb Stratum (Plot size: 30')				Definitions of Five Vegetation Strata:	
1. <u>Parthenocissus quinquefolia</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
2. <u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
3. <u>Vitis rotundifolia</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
4. _____				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
5. _____				Woody vine – All woody vines, regardless of height.	
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
<u>17</u> = Total Cover 50% of total cover: <u>8.5</u> 20% of total cover: <u>3.4</u>				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	
Woody Vine Stratum (Plot size: 30')					
1. <u>Vitis rotundifolia</u>	<u>3</u>	<u>Y</u>	<u>FAC</u>		
2. <u>Hedera helix</u>	<u>3</u>	<u>Y</u>	<u>FACU</u>		
3. _____					
4. _____					
5. _____					
<u>6</u> = Total Cover 50% of total cover: <u>3</u> 20% of total cover: <u>1.2</u>					
Remarks: (If observed, list morphological adaptations below).					

SOIL

Sampling Point: DS1B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/1	100					sandy loam	
3-10	10YR 4/1	95	10YR 5/4	5			clay loam	
10-20	10YR 5/1	95	10YR 5/4	5			clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	³ Indicators of hydrophytic vegetation and
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	wetland hydrology must be present,
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	unless disturbed or problematic.
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

Restrictive Layer (If observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville - Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS19
 Investigator(s): Roth Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Farm Field Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 36°44'42" Long: 76°10'00" Datum: _____
 Soil Map Unit Name: Acredate NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- | | |
|--------------------------------------------------------------------|------------------------------------------------------------------------|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Aquatic Fauna (B13) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Marl Deposits (B15) (LRR U) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (minimum of two required)

- | |
|--------------------------------------------------------------------|
| <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Moss Trim Lines (B18) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U) |

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____
 Water Table Present? Yes _____ No ☒ Depth (inches): _____
 Saturation Present? Yes _____ No ☒ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Lateral ditches through field .

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DS19

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling Stratum (Plot size: <u>30'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Shrub Stratum (Plot size: <u>30'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
Herb Stratum (Plot size: <u>30'</u>)				
1. <u>Urechloa platyphylla</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Cucurbita pepo</u>	<u>10</u>	<u>Y</u>	<u>UPL</u>	
3. <u>Solanum ptycanthum</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>42</u> = Total Cover 50% of total cover: <u>21</u> 20% of total cover: <u>8.4</u>				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
Woody Vine Stratum (Plot size: <u>30'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (If observed, list morphological adaptations below). <div style="height: 40px; border: 1px solid black;"></div>				

SOIL

Sampling Point: DS19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-5	10YR 4/2	95	10YR 5/4	5			sandy loam	
5-20	10YR 4/1	95	10YR 5/4	5			clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville - Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS20
 Investigator(s): Roth Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Farm Field Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 36°44'42" Long: 76°10'00" Datum: _____
 Soil Map Unit Name: Acrechle NWI classification: LPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DS20

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Shrub Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>30'</u>) 1. <u>Triticum aestivum</u> <u>70</u> <u>Y</u> <u>UPL</u> 2. <u>Vicia sativa</u> <u>1</u> <u>N</u> <u>FACU</u> 3. <u>Allium canadense</u> <u>1</u> <u>N</u> <u>FACU</u> 4. <u>Ambrosia artemisiifolia</u> <u>1</u> <u>N</u> <u>FACU</u> 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
50% of total cover: <u>36.5</u> 20% of total cover: <u>14.6</u> Woody Vine Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
50% of total cover: <u>0</u> 20% of total cover: <u>0</u> Remarks: (If observed, list morphological adaptations below).				

SOIL

Sampling Point: DS20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-5	10YR 4/2	95	10YR 5/4	5			sandy loam	
5-20	10YR 4/1	95	10YR 5/4	5			clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:



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MARINE RESOURCES
COMMISSION

• Wetlands Limits and Waters of the U. S. Ditches are as shown on the Wetland Delineation of the Centerville Farm Field Site, dated August 5, 2016, prepared by Roth Environmental, LLC.
This delineation was confirmed by the ACOE by ACOE letter dated August 26, 2016

PROJECT LIMITS

PROJECT LIMITS

LOT GEOMETRY REQUIREMENTS:

Proposed Zoning: R-10S
Front Setback: 25 feet
Minimum Lot Area: 10,000 square feet
Minimum Lot Width (at Front Setback Line): 80 feet
Minimum Lot Frontage (at F/W): 67 feet

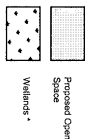


Figure 1 is a schematic diagram illustrating the relationship between various water management and conservation measures and the goal of "Waters of the U.S. Ditches to Remain". The diagram is organized into three main sections, each with a list of measures and arrows indicating their impact on the central goal.

- Non-Traditional:**
 - Vegetative Foreland Waters of the U.S. Farm Ditches to be Filled Length of Ditch to be Filled 2,820 ft
- Traditional:**
 - Vegetated Foreland Waters of the U.S. Farm Ditches to be Filled Length of Ditch to be Filled 300 ft
- Proposed Storm Pumps to Intercept Waters of the U.S. Ditches:**
 - Proposed Storm Pumps to Intercept Waters of the U.S. Ditches

The central goal, "Waters of the U.S. Ditches to Remain", is represented by a large, bold, italicized text in the center of the diagram. Arrows from the measures in the "Non-Traditional" and "Traditional" sections point towards this central goal, indicating that these measures are intended to maintain the waters of the U.S. ditches. The "Proposed Storm Pumps" section is positioned below the other two, suggesting a separate or additional measure to achieve the same goal.

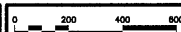
ELBOW ROAD FARM FIELDS

ELBOW ROAD FARM FIELDS

ELBOW ROAD
TAX PARCELS 0390000000380, & 0390000000382
WASHINGTON BOROUGH
CHESAPEAKE, VIRGINIA

Post-Approval Revisions

Post-Approval Revisions		



This drawing was prepared for use on a specific site contemporaneously with its issue date noted below, and it is not suitable for use on a different project site or at a later time. Use of this drawing for reference or example on another project requires the services of properly licensed Architects and Engineers. Reproduction of this drawing for *any* reason on another project is not authorized and may be contrary to the law.

09004 • J. Neurosci., February 22, 2006 • 26(8):2203–2212

preliminary
drawing -
not for
construction

Project #	09-0004
Checked by	Manager
Drawn by	Engineer / Technician
Issue Date	10/26/2016
Scale	1" = 200'
SWM Certification #	715555
VA Firm #	0405001 99a

AMERICAN
Engineering
American Engineering Associates - Southeast, P.A.
48 Viking Drive | Suite 170
Virginia Beach, Virginia 23452 (757) 468-6800

Sheet Name
Conceptual
Layout
Plan #5
for VMRC

ELBOW ROAD FARM FIELDS

Printed: 10/26/2016 12:16 PM

m:\09\004\preliminary plan\elbow road subdivision\vmrc\prelim 5 152 lots for vmrc.sm

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville-Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS1
 Investigator(s): Roth Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Terrace / Flat Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 36°44'42" Long: 76°10'00" Datum: _____
 Soil Map Unit Name: Gortie NWI classification: LPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: <u>Deep ditches on 2 sides of this area.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B18) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DS1

Tree Stratum (Plot size: <u>30'</u>)				Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Liquidambar styraciflua</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>		
2.	<u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>		
3.	<u>Acer rubrum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>		
4.						
5.						
6.						
<u>85</u> = Total Cover						
50% of total cover: <u>42.5</u> 20% of total cover: <u>17</u>						
Sapling Stratum (Plot size: <u>30'</u>)				Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>		
2.	<u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>		
3.	<u>Prunus serotina</u>	<u>5</u>	<u>N</u>	<u>FACU</u>		
4.						
5.						
6.						
<u>30</u> = Total Cover						
50% of total cover: <u>15</u> 20% of total cover: <u>6</u>						
Shrub Stratum (Plot size: <u>30'</u>)				Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Asimina triloba</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>		
2.	<u>Fagus grandifolia</u>	<u>1</u>	<u>N</u>	<u>FACU</u>		
3.						
4.						
5.						
6.						
<u>6</u> = Total Cover						
50% of total cover: <u>3</u> 20% of total cover: <u>1.2</u>						
Herb Stratum (Plot size: <u>30'</u>)				Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Vitis rotundifolia</u>	<u>7</u>	<u>Y</u>	<u>FAC</u>		
2.	<u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>		
3.	<u>Parthenocissus quinquefolia</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>		
4.	<u>Microstegium vimineum</u>	<u>3</u>	<u>N</u>	<u>FAC</u>		
5.						
6.						
7.						
8.						
9.						
10.						
11.						
<u>20</u> = Total Cover						
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>						
Woody Vine Stratum (Plot size: <u>30'</u>)				Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>		
2.	<u>Smilax rotundifolia</u>	<u>1</u>	<u>N</u>	<u>FAC</u>		
3.						
4.						
5.						
<u>6</u> = Total Cover						
50% of total cover: <u>3</u> 20% of total cover: <u>1.2</u>						

Remarks: (If observed, list morphological adaptations below).

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☐ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic
Vegetation
Present?

Yes ☒ No ☐

SOIL

Sampling Point: DS1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 4/1	95	10YR 5/8	5			sandy loam	
8-20	10YR 5/1	95	10YR 5/4	5			sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville-Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS2
 Investigator(s): Both Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR T Lat: 36°44'42" Long: 76°10'00" Datum: _____
 Soil Map Unit Name: Gertie NWI classification: LPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B18) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>surface</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DS2

Tree Stratum (Plot size: 30')				Dominance Test worksheet:	
1. <u>Acer rubrum</u>	30	Y	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>10</u>	(A)
2. <u>Liquidambar styraciflua</u>	20	Y	FAC	Total Number of Dominant Species Across All Strata: <u>11</u> (B)	
3. <u>Urtiodendron tulipifera</u>	20	Y	FACU		
4. _____					
5. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>91</u> (A/B)	
6. _____				Prevalence Index worksheet:	
70 = Total Cover					
50% of total cover: <u>35</u> 20% of total cover: <u>14</u>					
Sapling Stratum (Plot size: 30')				Total % Cover of: _____ Multiply by: _____	
1. <u>Liquidambar styraciflua</u>	15	Y	FAC	OBL species _____ x 1 = _____	
2. <u>Acer rubrum</u>	15	Y	FAC	FACW species _____ x 2 = _____	
3. _____				FAC species _____ x 3 = _____	
4. _____				FACU species _____ x 4 = _____	
5. _____				UPL species _____ x 5 = _____	
6. _____				Column Totals: _____ (A) _____ (B)	
30 = Total Cover				Prevalence Index = B/A = _____	
50% of total cover: <u>15</u> 20% of total cover: <u>6</u>				Hydrophytic Vegetation Indicators:	
Shrub Stratum (Plot size: 30')					
1. <u>Asimina triloba</u>	5	Y	FAC		
2. <u>Magnolia virginiana</u>	2	Y	FACU	1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ Problematic Hydrophytic Vegetation ¹ (Explain)	
3. <u>Vaccinium corymbosum</u>	1	N	FACU		
4. _____					
5. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
6. _____					
0 = Total Cover					
50% of total cover: <u>4</u> 20% of total cover: <u>1.6</u>				Definitions of Five Vegetation Strata:	
Herb Stratum (Plot size: 30')					
1. <u>Chasmanthium laxum</u>	7	Y	FACW		
2. <u>Arundinaria gigantea</u>	5	Y	FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.	
3. <u>Woodwardia areolata</u>	3	Y	OBL		
4. _____					
5. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
15 = Total Cover					
50% of total cover: <u>7.5</u> 20% of total cover: <u>3</u>					
Woody Vine Stratum (Plot size: 30')					
1. <u>Berchemia scandens</u>	5	Y	FAC		
2. <u>Euphymus americanus</u>	1	N	FAC		
3. _____					
4. _____					
5. _____					
6 = Total Cover					
50% of total cover: <u>3</u> 20% of total cover: <u>1.2</u>					
Remarks: (If observed, list morphological adaptations below).					

SOIL

Sampling Point: DS2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-12	10YR 3/1	100					sandy loam	
12-24	10YR 4/1	95	10YR 5/4	5			sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville-Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS3
 Investigator(s): Both Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR T Lat: 36° 44' 42" Long: 76° 10' 00" Datum: _____
 Soil Map Unit Name: Gertie NWI classification: LPL
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ___ Surface Water (A1) ___ Aquatic Fauna (B13) ___ High Water Table (A2) ___ Marl Deposits (B15) (LRR U) ___ Saturation (A3) ___ Hydrogen Sulfide Odor (C1) ___ Water Marks (B1) ___ Oxidized Rhizospheres along Living Roots (C3) ___ Sediment Deposits (B2) ___ Presence of Reduced Iron (C4) ___ Drift Deposits (B3) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Algal Mat or Crust (B4) ___ Thin Muck Surface (C7) ___ Iron Deposits (B5) ___ Other (Explain in Remarks) ___ Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B18) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) ___ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DS3

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. <u>Liquidambar styraciflua</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>9</u> (A) Total Number of Dominant Species Across All Strata: <u>11</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>82</u> (A/B)														
2. <u>Liriodendron tulipifera</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Acer rubrum</u>	<u>20</u>	<u>N</u>	<u>FAC</u>															
4. <u>Pinus taeda</u>	<u>10</u>	<u>N</u>	<u>FAC</u>															
5. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____	(A) _____ (B) _____
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = _____																	
FACW species _____	x 2 = _____																	
FAC species _____	x 3 = _____																	
FACU species _____	x 4 = _____																	
UPL species _____	x 5 = _____																	
Column Totals: _____	(A) _____ (B) _____																	
6. _____	_____	_____	_____															
<u>110</u> = Total Cover 50% of total cover: <u>55</u> 20% of total cover: <u>22</u>																		
Sapling Stratum (Plot size: <u>30'</u>)																		
1. <u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0' <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Prunus serotina</u>	<u>3</u>	<u>N</u>	<u>FACU</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
6. _____	_____	_____	_____															
<u>33</u> = Total Cover 50% of total cover: <u>16.5</u> 20% of total cover: <u>6.6</u>																		
Shrub Stratum (Plot size: <u>30'</u>)																		
1. <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.														
2. <u>Vaccinium corymbosum</u>	<u>2</u>	<u>Y</u>	<u>FACW</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														
6. _____	_____	_____	_____															
<u>7</u> = Total Cover 50% of total cover: <u>3.5</u> 20% of total cover: <u>1.4</u>																		
Herb Stratum (Plot size: <u>30'</u>)																		
1. <u>Arundinaria gigantea</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
2. <u>Chasmanthium laxum</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Lonicera japonica</u>	<u>3</u>	<u>Y</u>	<u>FACU</u>															
4. <u>Osmunda regalis</u>	<u>1</u>	<u>N</u>	<u>OBL</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
<u>14</u> = Total Cover 50% of total cover: <u>7</u> 20% of total cover: <u>2.8</u>																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. <u>Smilax rotundifolia</u>	<u>3</u>	<u>Y</u>	<u>FAC</u>															
2. <u>Vitis rotundifolia</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>8</u> = Total Cover 50% of total cover: <u>4</u> 20% of total cover: <u>1.6</u>																		
Remarks: (If observed, list morphological adaptations below).																		

SOIL

Sampling Point: DS3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/1	100					Sandy loam	
8-24	10YR 5/1	95	10YR 5/4	5			sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville - Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS4
 Investigator(s): Both Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 36°44'42" Long: 76°10'00" Datum: _____
 Soil Map Unit Name: Gertie NWI classification: LPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland?	Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____		
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>		

Remarks:

Deep ditch immediately adjacent to area

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Moss Trim Lines (B18)
<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DSH

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Pinus taeda</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A)
2. <u>Liriodendron tulipifera</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Liquidambar styraciflua</u>	<u>15</u>	<u>N</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>9</u> (B)
4. <u>Acer rubrum</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>89</u> (A/B)
5. _____	_____	_____	_____	Prevalence Index worksheet:
6. _____	_____	_____	_____	
<u>105</u> = Total Cover 50% of total cover: <u>52.5</u> 20% of total cover: <u>21</u>				Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling Stratum (Plot size: 30') 1. <u>Liquidambar styraciflua</u> <u>10</u> <u>Y</u> <u>FAC</u> 2. <u>Acer rubrum</u> <u>10</u> <u>Y</u> <u>FAC</u> 3. _____ 4. _____ 5. _____ 6. _____				
<u>20</u> = Total Cover 50% of total cover: <u>10</u> 20% of total cover: <u>4</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Shrub Stratum (Plot size: 30') 1. <u>Acer rubrum</u> <u>2</u> <u>Y</u> <u>FAC</u> 2. <u>Asimina triloba</u> <u>2</u> <u>Y</u> <u>FAC</u> 3. _____ 4. _____ 5. _____ 6. _____				
<u>4</u> = Total Cover 50% of total cover: <u>2</u> 20% of total cover: <u>.8</u>				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
Herb Stratum (Plot size: 30') 1. <u>Arundinaria gigantea</u> <u>5</u> <u>Y</u> <u>FACU</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____				
<u>5</u> = Total Cover 50% of total cover: <u>2.5</u> 20% of total cover: <u>1</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Woody Vine Stratum (Plot size: 30') 1. <u>Smilax rotundifolia</u> <u>5</u> <u>Y</u> <u>FAC</u> 2. <u>Vitis rotundifolia</u> <u>5</u> <u>Y</u> <u>FAC</u> 3. _____ 4. _____ 5. _____				
<u>10</u> = Total Cover 50% of total cover: <u>5</u> 20% of total cover: <u>2</u>				
Remarks: (If observed, list morphological adaptations below). 				

SOIL

Sampling Point: DS4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 4/1	95	10YR 5/B	5			sandy loam	
8-20	10YR 5/1	95	10YR 5/4	5			sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A, B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville - Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS5
 Investigator(s): Both Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Mounded Area Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 36°44'42" Long: 76°10'00" Datum: _____
 Soil Map Unit Name: Gortie NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: <u>AREA SURROUNDED BY DEEP DITCHES</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B18) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: D55

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liriodendron tulipifera</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>
2. <u>Pinus taeda</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
3. <u>Prunus serotina</u>	<u>20</u>	<u>N</u>	<u>FACU</u>
4. <u>Acer rubrum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
5. <u>Liquidambar styraciflua</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
6. _____	_____	_____	_____

120 = Total Cover

 50% of total cover: 60 20% of total cover: 24

Sapling Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2. <u>Liquidambar styraciflua</u>	<u>2</u>	<u>N</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____

12 = Total Cover

 50% of total cover: 6 20% of total cover: 2.4

Shrub Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Asimina triloba</u>	<u>2</u>	<u>Y</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____

2 = Total Cover

 50% of total cover: 1 20% of total cover: .4

Herb Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
2. <u>Microstegium vimineum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3. <u>Parthenocissus quinquefolia</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
4. <u>Chasmanthium laxum</u>	<u>2</u>	<u>N</u>	<u>FACU</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____

47 = Total Cover

 50% of total cover: 23.5 20% of total cover: 9.4

Woody Vine Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax rotundifolia</u>	<u>3</u>	<u>Y</u>	<u>FAC</u>
2. <u>Vitis rotundifolia</u>	<u>1</u>	<u>Y</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

4 = Total Cover

 50% of total cover: .2 20% of total cover: .8
Dominance Test worksheet:

 Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

 Total Number of Dominant Species Across All Strata: 8 (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

 Yes ☒ No ☐

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: D55

Profile Description: (Describe to the depth needed to document the Indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/1	100					sandy loam	
12-24	10YR 5/1	95	10YR 5/4	5			sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DSL6
 Investigator(s): Roth Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR or MLRA): LRRT Lat: 36°44'42" Long: 76°10'00" Datum: _____
 Soil Map Unit Name: Gertie NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ___ Surface Water (A1) ___ Aquatic Fauna (B13) ___ High Water Table (A2) ___ Marl Deposits (B15) (LRR U) ___ Saturation (A3) ___ Hydrogen Sulfide Odor (C1) ___ Water Marks (B1) ___ Oxidized Rhizospheres along Living Roots (C3) ___ Sediment Deposits (B2) ___ Presence of Reduced Iron (C4) ___ Drift Deposits (B3) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Algal Mat or Crust (B4) ___ Thin Muck Surface (C7) ___ Iron Deposits (B5) ___ Other (Explain in Remarks) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B18) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) ___ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DSL6

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Pinus taeda</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>11</u> (A)
2. <u>Liriodendron tulipifera</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Acer rubrum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>12</u> (B)
4. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>92</u> (A/B)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>75</u> = Total Cover 50% of total cover: <u>37.5</u> 20% of total cover: <u>15</u>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling Stratum (Plot size: 30') 1. <u>Acer rubrum</u> <u>15</u> <u>Y</u> <u>FAC</u> 2. <u>Liquidambar styraciflua</u> <u>15</u> <u>Y</u> <u>FAC</u> 3. <u>Liriodendron tulipifera</u> <u>5</u> <u>N</u> <u>FACU</u> 4. _____ 5. _____ 6. _____ <u>35</u> = Total Cover 50% of total cover: <u>17.5</u> 20% of total cover: <u>7</u>				
Shrub Stratum (Plot size: 30') 1. <u>Acer rubrum</u> <u>3</u> <u>Y</u> <u>FAC</u> 2. <u>Vaccinium corymbosum</u> <u>2</u> <u>Y</u> <u>FACU</u> 3. _____ 4. _____ 5. _____ 6. _____ <u>5</u> = Total Cover 50% of total cover: <u>2.5</u> 20% of total cover: <u>1</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: 30') 1. <u>Woodwardia areolata</u> <u>3</u> <u>Y</u> <u>OBL</u> 2. <u>Dioscorea villosa</u> <u>2</u> <u>Y</u> <u>FACU</u> 3. <u>Chasmanthium laxum</u> <u>2</u> <u>Y</u> <u>FACU</u> 4. <u>Clethra alnifolia</u> <u>2</u> <u>Y</u> <u>FACU</u> 5. <u>Osmunda regalis</u> <u>1</u> <u>N</u> <u>OBL</u> 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ <u>10</u> = Total Cover 50% of total cover: <u>5</u> 20% of total cover: <u>2</u>				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
Woody Vine Stratum (Plot size: 30') 1. <u>Perchermyia scandens</u> <u>3</u> <u>Y</u> <u>FAC</u> 2. <u>Vitis rotundifolia</u> <u>2</u> <u>Y</u> <u>FAC</u> 3. _____ 4. _____ 5. _____ <u>5</u> = Total Cover 50% of total cover: <u>2.5</u> 20% of total cover: <u>1</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: (If observed, list morphological adaptations below). 				

SOIL

Sampling Point: DSL6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/1	100					sandy loam	
8-24	10YR 5/1	95	10YR 5/4	5			sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville - Farm Field Area City/County: Chesapeake Sampling Date: 05/10/14
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS7
 Investigator(s): Roth Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Mounded Area Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 36°44'42" Long: 76°10'00" Datum: _____
 Soil Map Unit Name: Cortie NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: <u>Deep ditches in vicinity of station.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B18) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DS7

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Liriodendron tulipifera</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A)
2. <u>Pinus taeda</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Liquidambar styraciflua</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>10</u> (B)
4. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>70</u> (A/B)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	Prevalence Index worksheet:
95 = Total Cover 50% of total cover: <u>47.5</u> 20% of total cover: <u>19</u>				
Sapling Stratum (Plot size: 30')				Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. <u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Liriodendron tulipifera</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain)
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
25 = Total Cover 50% of total cover: <u>12.5</u> 20% of total cover: <u>5</u>				
Shrub Stratum (Plot size: 30')				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. <u>Acer rubrum</u>	<u>2</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	Remarks: (If observed, list morphological adaptations below).
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
2 = Total Cover 50% of total cover: <u>1</u> 20% of total cover: <u>.4</u>				
Herb Stratum (Plot size: 30')				
1. <u>Arundinaria gigantea</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Parathelypteris noveboracensis</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Parthenocissus quinquefolia</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
4. <u>Toxicodendron radicans</u>	<u>3</u>	<u>N</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
23 = Total Cover 50% of total cover: <u>11.5</u> 20% of total cover: <u>4.6</u>				
Woody Vine Stratum (Plot size: 30')				
1. <u>Vitis rotundifolia</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Gelsemium sempervirens</u>	<u>3</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
13 = Total Cover 50% of total cover: <u>6.5</u> 20% of total cover: <u>2.6</u>				

Sampling Point: DS7

[illegible]

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville-Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DSB
 Investigator(s): Both Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Slight slope Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 36° 44' 42" Long: 76° 10' 00" Datum: _____
 Soil Map Unit Name: Gertie NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	

Remarks:

Deep ditches on two sides of this upland area.

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<input type="checkbox"/> Marl Deposits (B15) (LRR U)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:

Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	

(includes capillary fringe)

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DSB

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Liriodendron tulipifera</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)
2. <u>Pinus taeda</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>7</u> (B)
4. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>86</u> (A/B)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
50% of total cover: <u>100</u> = Total Cover 20% of total cover: <u>20</u>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling Stratum (Plot size: 30') 1. <u>Acer rubrum</u> <u>15</u> <u>Y</u> <u>FAC</u> 2. <u>Liquidambar styraciflua</u> <u>15</u> <u>Y</u> <u>FAC</u> 3. <u>Quercus michauxii</u> <u>5</u> <u>N</u> <u>FACW</u> 4. _____ 5. _____ 6. _____ 50% of total cover: <u>35</u> = Total Cover 20% of total cover: <u>7</u>				
Shrub Stratum (Plot size: 30') 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 50% of total cover: <u>0</u> = Total Cover 20% of total cover: <u>0</u>				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: 30') 1. <u>Arundinaria gigantea</u> <u>5</u> <u>Y</u> <u>FACU</u> 2. <u>Tupulatia discolor</u> <u>1</u> <u>N</u> <u>FACU</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ 50% of total cover: <u>6</u> = Total Cover 20% of total cover: <u>1.2</u>				
Woody Vine Stratum (Plot size: 30') 1. <u>Vitis rotundifolia</u> <u>3</u> <u>Y</u> <u>FAC</u> 2. _____ 3. _____ 4. _____ 5. _____ 50% of total cover: <u>3</u> = Total Cover 20% of total cover: <u>1.6</u>				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
Remarks: (If observed, list morphological adaptations below). 				

SOIL

Sampling Point: DSB

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
<u>D-12</u>	<u>10YR 3/1</u>	<u>100</u>				<u>Sandy loam</u>	
<u>12-24</u>	<u>10YR 5/1</u>	<u>95</u>	<u>10YR 5/4</u>	<u>5</u>		<u>Sandy clay loam</u>	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A, B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville-Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS9
 Investigator(s): Roth Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR1 Lat: 36°44'42" Long: 76°10'00" Datum: _____
 Soil Map Unit Name: Gertie NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DS9

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Liriodendron tulipifera</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
2. <u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Acer rubrum</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
50% of total cover: <u>45</u> 20% of total cover: <u>18</u> <u>90</u> = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling Stratum (Plot size: 30')				
1. <u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>15</u> 20% of total cover: <u>6</u> <u>30</u> = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Shrub Stratum (Plot size: 30')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Herb Stratum (Plot size: 30')
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Woody Vine Stratum (Plot size: 30')
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>0</u> 20% of total cover: <u>0</u> <u>0</u> = Total Cover				Remarks: (If observed, list morphological adaptations below).
Herb Stratum (Plot size: 30')				
1. <u>Chasmanthium laxum</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	Woody Vine Stratum (Plot size: 30')
3. <u>Woodwardia areolata</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
4. <u>Osmundastrum cinnamomeum</u>	<u>1</u>	<u>N</u>	<u>FACW</u>	
5. _____	_____	_____	_____	Woody Vine Stratum (Plot size: 30')
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>36</u> 20% of total cover: <u>7.2</u> <u>36</u> = Total Cover				Woody Vine Stratum (Plot size: 30')
Woody Vine Stratum (Plot size: 30')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Woody Vine Stratum (Plot size: 30')
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
50% of total cover: <u>0</u> 20% of total cover: <u>0</u> <u>0</u> = Total Cover				Woody Vine Stratum (Plot size: 30')
Woody Vine Stratum (Plot size: 30')				
1. _____	_____	_____	_____	

Sampling Point: DS9

Atlantic and Gulf Coastal Plain Region – Version 2.0

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Centerville-Farm Field Area City/County: Chesapeake Sampling Date: 05/10/16
 Applicant/Owner: Tri-Cities Properties, LLC State: VA Sampling Point: DS10
 Investigator(s): Both Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Upland Flat Local relief (concave, convex, none): None Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 36° 44' 42" Long: 76° 10' 00" Datum: _____
 Soil Map Unit Name: Gertie NWI classification: LPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland?	Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____		
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: DS10

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Pinus torida</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>62.5</u> (A/B)
2. <u>Liriodendron tulipifera</u>	<u>35</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Liquidambar styraciflua</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>85</u> = Total Cover 50% of total cover: <u>42.5</u> 20% of total cover: <u>17</u>				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling Stratum (Plot size: 30')				
1. <u>Acer rubrum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
6. _____	_____	_____	_____	
<u>30</u> = Total Cover 50% of total cover: <u>15</u> 20% of total cover: <u>6</u>				
Shrub Stratum (Plot size: 30')				Herb Stratum (Plot size: 30')
1. <u>Liquidambar styraciflua</u>	<u>3</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	Woody Vine Stratum (Plot size: 30')
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	Remarks: (If observed, list morphological adaptations below).
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>3</u> = Total Cover 50% of total cover: <u>1.5</u> 20% of total cover: <u>.6</u>				
Herb Stratum (Plot size: 30')				
1. <u>Parthenocissus quinquefolia</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Toxicodendron radicans</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
3. <u>Vitis rotundifolia</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>14</u> = Total Cover 50% of total cover: <u>7</u> 20% of total cover: <u>2.8</u>				
Woody Vine Stratum (Plot size: 30')				
1. <u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Vitis rotundifolia</u>	<u>2</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Toxicodendron radicans</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>8</u> = Total Cover 50% of total cover: <u>4</u> 20% of total cover: <u>1.6</u>				

SOIL

Sampling Point: DS10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/1	100					sandy loam	
12-24	10YR 5/1	95	10YR 5/4	5			sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A, B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: